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Hostile Bid for PeopleSoft May Delay Apps Purchases

J.D. Edwards sues Oracle for obstructing merger

BY MARC L. SONGINI
DENVER

Whatever the outcome, Oracle Corp.'s hostile takeover bid for PeopleSoft Inc. is already creating confusion and doubt among users of both PeopleSoft and J.D. Edwards & Co.

business applications.

Some users last week said they may delay software purchases until the buyout attempt is resolved. For example, John Hill, CIO at Praxair Inc. in Danbury, Conn., said the maker of industrial gases will wait to see which acquisition scenario plays out before making a decision on whether

Oracle Bid, page 49

Java Should Be Open-Source, Creator Says

Other Sun execs wary of incompatibility issues

BY CAROL SLIWA
SAN FRANCISCO

If pressed to vote yea or nay, the "father of Java" said last

week that he would cast his ballot in favor of making his creation more open-source, even though he recognizes that some of his Sun Microsystems Inc. colleagues make strong counterarguments.

During an interview at the JavaOne conference here, James Gosling, the Sun vice president who unleashed the programming language eight years ago, said he thinks Java

Java, page 13



K-B-KIDS' MICK LESTER uses a mix of tools to combat fraud.

RAY NG
NEWSPAPER

Vendors Clamp Down On License Compliance

Audits increase as software makers look to offset sagging sales by enforcing existing contracts

BY THOMAS HOFFMAN
LOS ANGELES

IT managers at a Gartner Inc. conference here last week said software vendors are increasingly threatening — and then conducting — audits to determine whether users are complying with their licensing agreements.

According to IT professionals and Gartner analysts, the use of software audits has swelled in recent months as vendors look for ways to generate additional revenue from existing users to make up for reduced spending on new licenses. Vendors such as Microsoft Corp. and Oracle Corp. have long done audits of some of their customers, but

conference attendees said other software developers are pushing harder on audits.

Some users are trying to be proactive. For instance, the city of Chesapeake, Va., recently completed a nine-month internal audit of its Microsoft

desktop software licenses and found itself "to be in pretty good shape," said Janet Hadley, an account administrator for the municipality.

But other users are still getting their license-tracking in order so they will be prepared for potential audits.

"We're currently looking for an asset management tool to help us track software licenses and invoices more effectively,"

ASSET TRACKING

said Ken Walton, a Tampa, Fla.-based project manager at Verizon Communications. The telecommunications company can no longer monitor its licensing agreements manually, Walton said, "because we just don't have enough people."

At Harley-Davidson Motor Co. in Milwaukee, software contracts are currently administered by project managers. "But that's not what we want to be doing," said Shannon Kaul, an asset manager at the motorcycle maker. So the Harley-Davidson Inc. sub-

Audits, page 14

Wal-Mart Backs RFID Technology

Will require suppliers to use 'smart' tags by 2005

BY JAIKUMAR VIJAYAN
AND BOB BREWIN
CHICAGO

Wal-Mart Stores Inc. last week said it plans to require its top 100 suppliers to put radio-frequency identification tags on shipping crates and pallets by January 2005, a move that's likely to spur broader adoption of the technology because of Wal-Mart's market clout.

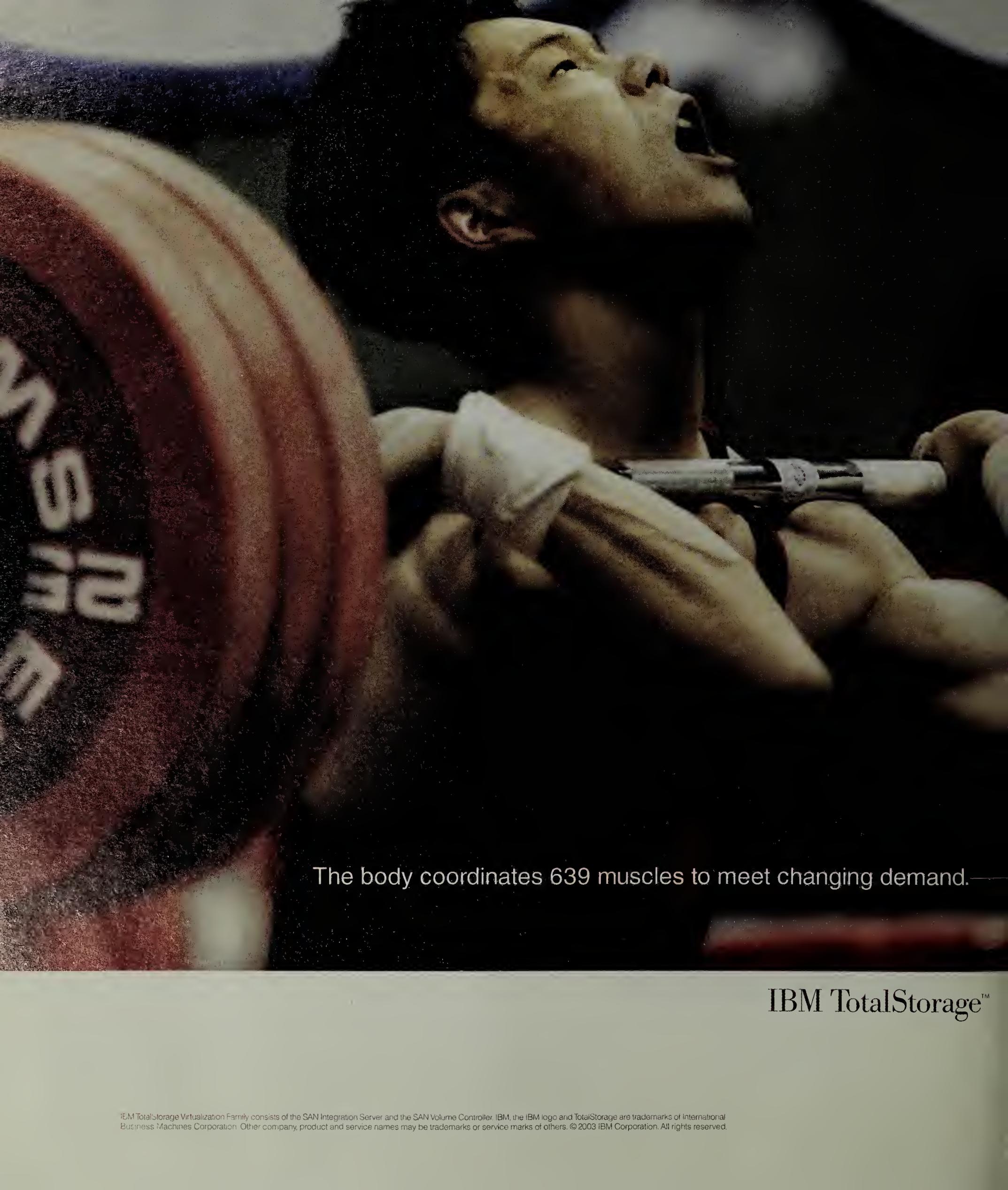
However, at the Retail Systems 2003/VICS Collaborative Commerce conference here, IT managers and technology vendors alike said that RFID devices still need to overcome major manufacturing, pricing

RFID, page 14

Fraud-Busters

KNOWLEDGE CENTER E-BUSINESS

Tired of losing millions of dollars to fraud, Internet retailers are teaming up to fight online credit card scams and take back the e-neighborhood. Page 35

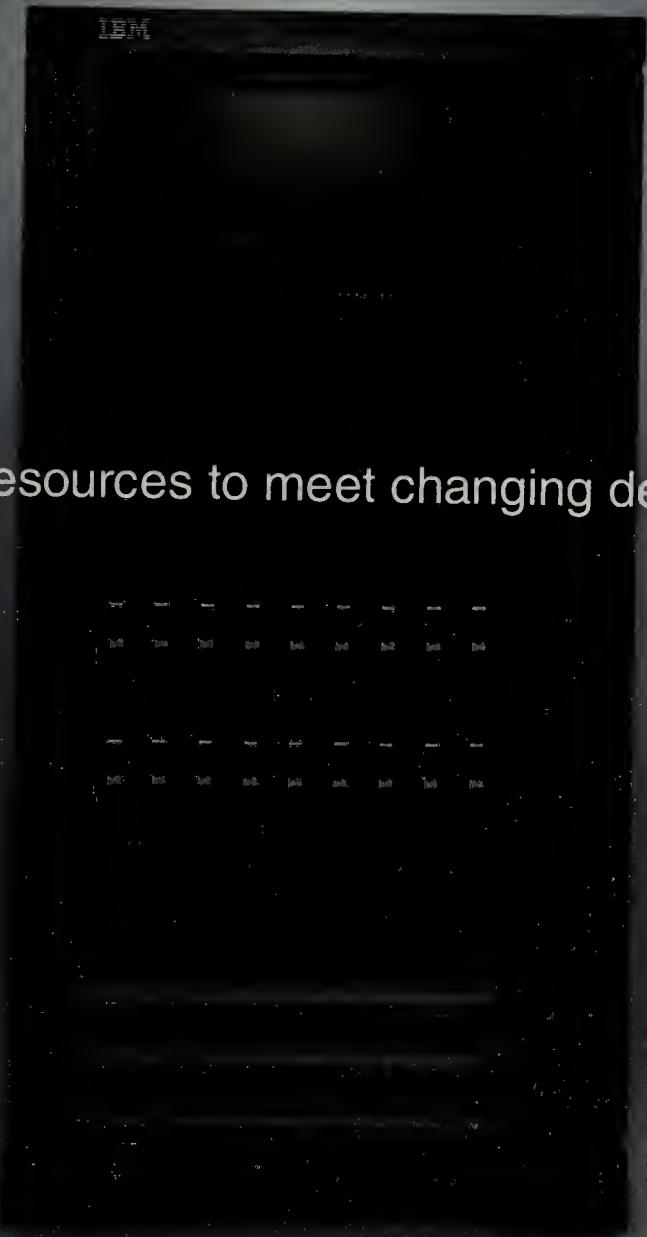


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Reining in Personal Firewalls

In the Technology section: New tools let IT regain control over distributed personal firewall software and prevent potential attackers from commandeering remote users' machines. **Page 28**



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.Net vs. Java

DEVELOPMENT: The debate continues, with columnists Matt Puccini and Keith Franklin taking opposing sides. **QuickLink k2350**

Protect Your Data From Wi-Fi Attacks

MOBILE/WIRELESS: Don't miss these tips on how to make a Wi-Fi network more secure. **QuickLink 38874**

Best Practices for Mastering Secure Code

SECURITY: The cost of fixing faulty software soars after an application is deployed, says Steve Orrin, CTO at Sanctum Inc. Here's how and why you need to build security into Web apps from the start. **QuickLink 38578**

Your CRM Is Only As Good as Your Data

SOFTWARE: Bad data can bring down a CRM system faster than just about anything else. Ascential Software's Bill Hobbib offers some advice about how to avoid data problems. **QuickLink 38953**

You, Too, Can Contribute To Open-Source

OPERATING SYSTEMS: If your company isn't developing source code, you can still help the open-source movement — while boosting your technology ROI, writes columnist Timothy Witham. **QuickLink 38782**

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AT DEADLINE

GSA Reviewing MCI as Contractor

A spokeswoman for the U.S. General Services Administration (GSA) confirmed on June 13 that its inspector general has made an official referral to review the federal contractor status of WorldCom Inc., which is now operating as MCI. The referral goes to the GSA's suspending and debarring official, a common procedure, according to the spokeswoman. A Senate committee launched an investigation in May into why federal contracts were given to WorldCom after financial problems were made public.

Oracle Reports Strong Quarter

Oracle Corp. last week announced revenue of \$2.83 billion for its fiscal fourth quarter, up from \$2.77 billion for the same quarter a year ago. Oracle said it had \$9.47 billion in revenue for its full fiscal year, 2% lower than the \$9.67 billion posted last year. CEO Larry Ellison said the company "had a great applications quarter" compared with its competitors.

Former VP Pleads Guilty to Fraud

Terry W. Davis, former vice president of finance and controller for Santa Clara, Calif.-based Network Associates Inc., last week pleaded guilty to charges of securities fraud. They were the first charges to emerge from the government's investigation into the company's bookkeeping practices. Network Associates couldn't immediately comment.

Short Takes

Revenue from new CRM software licenses fell 24.7% in 2002, according to GARTNER INC. . . TRANSMETA CORP. in Santa Clara has taken an unspecified equity stake in Hong Kong-based Linux developer CHINESE 2000 HOLDINGS LTD.

Sybase Gives China Free Software to Fight SARS

Company answers request for help with \$300,000 worth of database software

BY TODD R. WEISS

WHEN THE Chinese Embassy in Washington sent out hundreds of e-mails early last month asking the world for ideas and information on how to control the spread of SARS, the IT community responded.

Sybase Inc. said last week that it will donate approximately \$300,000 worth of database management software that will be used to monitor and track existing and new cases of the potentially fatal respiratory disease.

The e-mails were sent out by Dr. Larry Wu in his capacity as second secretary for science and technology at the Chinese Embassy. Hundreds

of replies came back from technology companies, business associations, consultants and others, mostly in the U.S., Wu said.

One of the e-mail recipients was the nonprofit Computerworld Honors Program, which recognizes IT users around the world who take technology in new and innovative directions to benefit mankind.

Computerworld has a seat on the board of the Honors Program and is a co-founder of the group, which was established in 1988.

Dan Morrow, executive director of the program in Herndon, Va., said the e-mail was forwarded to Honors Program board members, including a Sybase representative.

Sybase CEO John Chen said a company manager suggested to his colleagues that they offer assistance to Chinese health authorities. "We all immediately, within minutes, said, 'Great idea,'" Chen said. "They asked for help, and we were just qualified in this case to help them."



THE ASSOCIATED PRESS
Sybase's software will help track the SARS virus in China.

Analysts Say Evidence May Support SCO Case

Contested code gives credence to Unix claim, but courts will ultimately decide

BY TODD R. WEISS

As promised, The SCO Group Inc. last week revealed to several industry analysts some of the Linux source code that it claims was illegally copied from Unix.

But analysts have varying opinions about the significance of what they were shown and how it fits in with the \$1 billion lawsuit that Linden, Utah-based SCO filed against IBM in March. In that lawsuit, SCO alleges that IBM misappropriated SCO Unix trade secrets by putting some of the code into Linux [QuickLink 3690].

Laura DiDio, an analyst at The Yankee Group in Boston,

said she saw "two or three" samples of the allegedly infringing Linux code that appeared to be a "copy and paste" match of the SCO Unix code.

DiDio and the other analysts were able to view the code only under a nondisclosure agreement, so she could

I think there is a basis that SCO has a credible case. This is not a nuisance case.

LAURA DIDI, ANALYST,
THE YANKEE GROUP

not divulge details, she said.

"The courts are going to ultimately have to prove this, but based on what I'm seeing . . . I think there is a basis that SCO has a credible case," DiDio said. "This is not a nuisance case."

George Weiss, an analyst at Gartner Inc. in Stamford, Conn., recently reviewed several supporting documents from SCO, and he said they potentially bolster the company's claims.

The documents allegedly show the contracts that gave SCO the rights to Unix. Weiss refused to sign the nondisclosure agreement, so he didn't view any of the contested code. But the documents he saw at least gave credence to SCO's claims, he said.

Not a Judge or Jury

Bill Claybrook, an analyst at Boston-based Aberdeen Group Inc., said the code he viewed shows that SCO could have a claim. But he noted that

The products Sybase is providing include Sybase IQ, Enterprise Application Server, Adaptive Server Enterprise, PowerBuilder and PowerDesigner. The software will be used to create critically needed databases to track and monitor SARS cases in hospitals and other health centers across the country.

Dublin, Calif.-based Sybase made the donation directly to the Chinese Center for Disease Control and Prevention. Although no hardware systems have been donated with the Sybase software, Wu indicated that China has sufficient systems in place to make immediate use of Sybase's donation.

Wu said his country hasn't been shy in the past about asking the world for assistance in times of natural disasters, such as floods or earthquakes. With SARS, though, it took a while for China to seek help, he said. "We have made some mistakes in the campaign to fight SARS," Wu said. "We [initially] thought it was not so serious a disease." ▀

his assessment based on a brief look at some of the code is far different from a judge or jury eventually reaching a verdict in the IBM case. "I have no idea" if there's a problem with the code, Claybrook said.

"From what I've seen, I think people should be taking the SCO accusations seriously, but I don't know if they have any proof," he said. Although he was shown code that was the same in both Unix and Linux, Claybrook said there was no way to determine the origin of the code.

Dan Kusnetzky, an analyst at IDC in Framingham, Mass., said he turned down SCO's offer to look at the code because it wouldn't have provided any fair conclusions or answered any questions about the case.

Even if there are code matches between Linux and Unix, he said, there would be no way to know whether it was put there legally or who put it there. "How do they know it was IBM?" he said. ▀

HP Users Welcome Expanded OpenView Product Line

Better network management is key to vendor's 'adaptive enterprise' initiative

BY MATT HAMBLEN

Hewlett-Packard Co. will take some of the vapor out of its "adaptive enterprise management" strategy with the introduction today of more than 30 new and enhanced OpenView management products and services.

The products are being announced at the HP Software Forum in Chicago, where users will gain exposure to concrete examples of HP's adaptive enterprise initiative.

That initiative is mirrored by strategies from competitors such as IBM, Sun Microsystems Inc. and Computer Associates International Inc., which variously describe such technologies as "autonomic" or "on-demand" computing. The aim is to enable businesses to reduce IT complexity and cost by creating an infrastructure that changes with business demands.

One of the enhanced tools being announced today, HP OpenView Network Node Manager 7.0 (NNM), caught the attention of several OpenView users planning to attend the conference. Enhancements to the widely used network management tool include support for Linux and the ability to manage more objects on a network, as well as support for native Duplicate IP. The latter is useful for collecting network data at one point on multiple IP networks, said Bill Emmett, solutions marketing manager at HP.

Duplicate IP support is interesting because it could help recently merged companies to monitor combined IP networks that aren't identical, said Jason Kennedy, a systems management analyst at Best Buy Canada Ltd. in Burnaby, British Columbia.

Best Buy Canada has a large

OpenView project under way that started in late 2002 and should take another year to fully implement.

Once complete, the system would monitor networks and network devices in 130 stores and warehouses in Canada "through a single pane of glass with a service-oriented focus," Kennedy said.

"Adaptive enterprise management" might be called 'autonomic' or 'on-demand,' but that's just wordsmithing," he said. "It really comes down to how I save money for the busi-

ness. That's why I exist."

Another OpenView user, Zurich Life Insurance Company of America in Schaumburg, Ill., is looking for an easier interface with the HP OpenView Service Navigator tool, said Timothy Hagn, vice president of Zurich's IT operations and engineering.

In fact, HP said, Service Navigator Value Pack 7.1, being announced today, is easier to use and includes a new connection between Service Navigator and Open View Service Desk to help correlate network problems with customer service calls received by the help desk.

In the long term, Hagn said,

Among HP's New Products

HP OpenView Network Node Manager 7.0: Starter Edition and Advanced Edition. Includes diagnostics tools; supports Linux and IP telephony networks.

HP OpenView Service Navigator Value Pack 7.1: Offers new graphical interface to ease modeling of IT services.

HP OpenView Transaction Analyzer 2.0: Analyzes application transactions at the client, Web server or application server.

member of OpenView Forum International, a 7,000-member user group in Emmaus, Pa., said he wants to learn more this week about enhancements to NNM.

Users are interested in how NNM will integrate with technology from Cisco Systems Inc. and voice-over-IP products, Vaughn said. In recent years, he said, users have had to "pound on HP" to include monitoring functionality for virtual LANs, something users had to build themselves until HP finally responded.

"They rode on their laurels for a while, but in the last year or two, they've started doing more," Vaughn said.

With the exception of the Service Navigator Value Pack, which will be available in four months, all of the products being announced today will be available within three months, HP officials said. ▀

he wants OpenView's adaptive technology to monitor his network and describe ways that he can quickly cut down on electricity and ventilation costs for computing centers by tapping underused servers.

Kirby Vaughn, a board

DHS Sets Timeline for IT Integration

CIO says project due to be finished within two years

BY PATRICK THIBODEAU
WASHINGTON

Steve Cooper, who as CIO at the U.S. Department of Homeland Security (DHS) must untangle the mess of disparate networks and data standards of the 22 federal agencies that merged to form the DHS, said last week that a unified IT infrastructure will be completed within 18 to 24 months.

"We're moving toward one Department of Homeland Security," Cooper said at the E-Gov conference here. "We want to unify and simplify the environment as rapidly as we can."

Cooper said he plans to rely heavily on commercial applications to accomplish what is no simple task. Federal agencies have historically operated autonomously, and their IT systems weren't designed to interoperate with one another.

According to Lee Holcomb, chief technology officer at the

DHS, a key hurdle to be overcome is the various agencies' differing business rules, which dictate how data is described, collected and accessed.

Holcomb's job is to devise a plan to make data held by each agency accessible by other agencies under the DHS umbrella. Data mart and data warehousing options are currently under consideration.

DHS is also examining best approaches for providing remote users with wireless access to department systems. The department also plans to increase the deployment of portable devices within the next six to nine months.

As agency integration ef-

forts take shape, department IT officials expect to post more job advertisements in the months ahead.

Although position requirements haven't yet been fully identified, there are many technologists who have "a desire to become part of the Department of Homeland Security mission," said Pat Schambach, CIO for the Transportation Security Administration, which is now an agency of the DHS.

Getting a job at the agency requires a security clearance, but officials say that hasn't been an obstacle — getting an initial security clearance can be accomplished in as little as two weeks. Higher security clearance levels, however, can take months.

Meanwhile, emerging technologies appear to be playing a growing role at federal agencies. For instance, Cooper said, agencies are working with commercial vendors to find ways to utilize unstruc-

tured data, such as data that isn't located in a relational database and can't be easily manipulated and analyzed.

The CIO Council, a body made up of all the CIOs in the federal government, has in fact formed a committee to examine emerging technologies.

"We want the government to be at the forefront [of] leveraging technology," said U.S. Air Force CIO John Gilligan. "We want to be scanning the horizon and be an early adopter. We need to convey to industry what our technology needs are."

Craig Luigart, CTO at the U.S. Department of Education, disputed the stereotype that the government lags behind the private sector in the adoption of IT.

Many agencies were early adopters of new technologies, such as voice over IP and virtual private networks, and they are now seeing returns on those investments, he noted.

"I never liked being No. 2," Luigart said. ▀



PATRICK THIBODEAU
STEVE COOPER said commercial applications will play a big part in unifying the DHS's infrastructure.

FREE FOR A PRICE

A scholarship-for-service program for IT security professionals in federal agencies is working:

QuickLink 39180
www.computerworld.com

BRIEFS**Microsoft Acquires Antivirus Assets**

Microsoft Corp. has agreed to buy the intellectual property and technology assets of GeCAD Software SRL, an antivirus software vendor in Bucharest, Romania. Microsoft plans to use the technology as part of an upcoming antivirus offering. But it said a GeCAD product used primarily with Linux systems will be dropped. The financial terms of the deal weren't disclosed.

Cisco Gets Ruling Against Huawei

A federal judge in Marshall, Texas, issued a preliminary injunction barring Shenzhen, China-based Huawei Technologies Co. from selling routers that include software derived from Cisco Systems Inc.'s source code. But Huawei, which was sued by Cisco in January, said the injunction is "extremely narrow" and won't affect routers that have replaced the disputed ones.

SuSE Readies Linux for Desktops

SuSE Linux AG said it plans to release a desktop PC version of Linux for corporate users in the U.S. and Europe later this month. The SuSE Linux Desktop software starts at \$598 for five end-user licenses and comes bundled with Sun Microsystems Inc.'s StarOffice 6.0 suite of desktop applications. But Nuremberg, Germany-based SuSE said it will also support Microsoft Office.

Short Takes

MERCURY INTERACTIVE CORP. said it's acquiring KINTANA INC., a developer of software for monitoring IT operations, in a cash-and-stock deal valued at about \$225 million. Both companies are based in Sunnyvale, Calif. . . . YAHOO INC., also in Sunnyvale, announced an upgrade of its instant messaging software for corporate users.

MARK HALL ■ ON THE MARK

Sun Exec Blasts IBM for Linux . . .

... strategy, saying, "IBM has been using Linus [Torvalds] like a tool and exploiting the open-source community." Those fightin' words come from Jonathan Schwartz, executive vice president for Sun's software group. He **doesn't think IBM's Linux sales have been kind to CIOs**, either. "They've been spreading IP [intellectual property] radiation" to companies that get their Linux from IBM because of Big Blue's contract problems with SCO Group. Sun, he hastened to add, has crossed all its t's and dotted all its i's with SCO just in case the Unix/Linux

legal claims have merit. ■ IBM was on the minds of many at Sun's eighth JavaOne Conference in San Francisco, and not just because it had two booths on the show floor. Rumors flew daily from Moscone Center North to South, where the gathering of 15,000 or so Java devotees was held, that IBM "needed to buy Sun to save Java," as one breathless rumormonger put it. But Sun's marketing VP for software dismissed that notion with a laugh. "IBM can't afford us," guffawed John Loiacono. "We have five-and-a-half billion dollars in the bank. IBM doesn't have \$5 billion." True. But, hey, interest rates are pretty low. Maybe IBM could take out a second mortgage on its digs in Armonk, N.Y. ■ If you're a rabid Solaris user, these verbal jousts can be fun. But more fun might be

an early look at Solaris 10. Real early. Like a year to a year and a half before it's released. Word is that Sun is developing a program called Express that will give users a hands-on experience with its

xApps Party

At this week's Sapphire Conference for SAP AG users in Orlando, says VP Peter Graf, the company will "have a coming-out party" for xApps, third-party programs that run on top of SAP's breadth of applications. Expect to see the likes of Accenture Ltd., Digital Fuel Technologies Inc. and IBM unveil some new software in steamy Florida.

Unix system well before the beta release. ■ Schwartz, Loiacono and other Sun execs also enjoyed knocking Microsoft for its "failure" in the handset market. By the end of the year, Schwartz claims, Java will be installed on more than 350 million cell phones, BlackBerrys and other similar devices, while Windows "won't even be there." What makes Java appealing to IT on handsets, says Ernie Cormier, vice president at Nextel Communications Inc., is that "you can control the entire UI [user interface]." He envisions IT deploying Java

handsets to sales forces, field technicians and other road warriors instead of laptops, "reducing your dependence on PCs." Cormier says Nextel is committed to Java and by the end of the year will ship some new devices that have IT in mind. ■ These expanding Java environments will need many new programmers. And Sun execs pledged to raise the number from the currently claimed 3 million to the wished-for 10 million. Where will they come from? According to David Litwack, senior vice president at Novell Inc., they'll have to be recruited from the ranks of business developers. You know, the kind who whip out Visual Basic scripts or complex Excel spreadsheets. "We need to raise the level of abstraction for the bulk of what's done in J2EE," he says. John Fowler, Sun's chief technology officer for software, agrees. "J2EE needs simpler expressions to take advantage of pre-coded functions," he says. That's **not exactly a snappy marketing slogan**, but it's exactly what Novell will be doing this fall when it ships its Extend 5.0 suite for those developers who may not want to delve into the devilish details of Java code to accomplish their work. ■ Hewlett-Packard wants to attract Java coders, too, especially to its OpenView application. But HP thinks **they sleep too much**, so it will soon send out invitations to developers for its first HP Bazaar Camp USA. The three-day, all-day, all-night coding carnival has already run seven times in Europe and Asia, but the execs behind it believe it's time for you, too, to jack yourself up on caffeine and prove you can program till the sun comes up. Sleeping bags, massages and laptops will be doled out to those lucky few who qualify for the Sept. 16-18 event. Check out www.hpbazaar.com for all of the bizarre details. ▶

New Bugbear Virus Targets Financial Institutions

Firewalls, antivirus software are so far keeping worm out of banks' systems

BY TODD R. WEISS

The latest variant of the Bugbear computer virus is being investigated by the FBI because it was found to be targeting financial institutions.

Bill Murray, a spokesman for the FBI, said last week that the investigation began June 6 and will seek to track down the originators of the virus through electronic "fingerprints" often left behind within the code.

Bugbear is a mass-mailing worm that also spreads through networks, according to Cupertino, Calif.-based Symantec Corp.

The virus can infect executable files and is particularly dangerous because it can log the keystrokes a user enters on his computer, potentially allowing an attacker to get a victim's personal information and account numbers. It also contains backdoor capabilities

and can shut down antivirus and firewall programs.

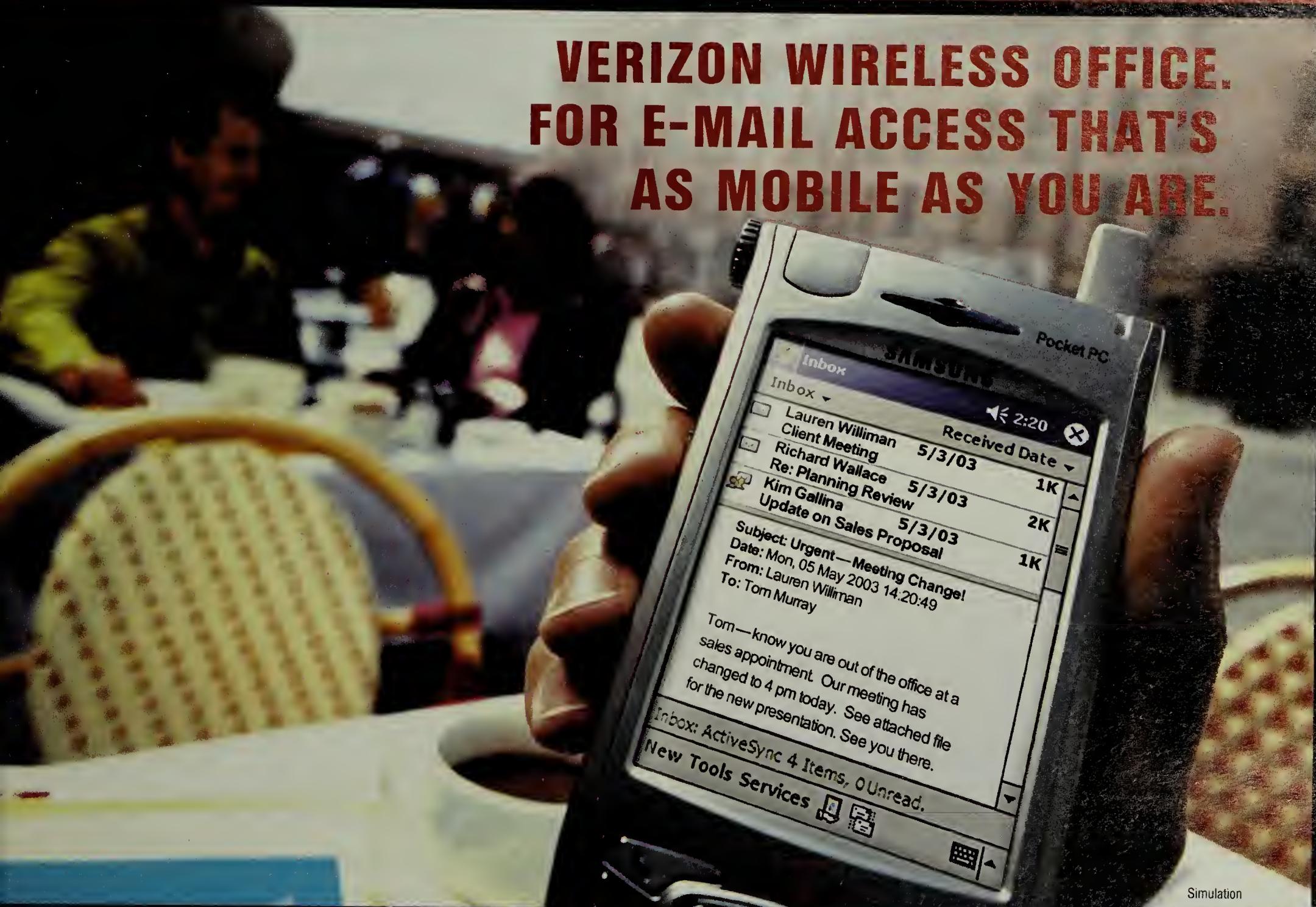
Banks were identified as key targets when it was discovered that the worm's code contains a list of the domain names of more than 1,000 banks from around the world, according to Symantec.

Suzanne Gorman, chairman of the Financial Services Information Sharing and Analysis Center, said the Reston, Va.-based financial industry security organization responded immediately to the first reports of Bugbear attacks on banks by warning members to

make sure that their security systems are fully in place. No member banks have yet been infiltrated by the Bugbear virus because of firewalls, antivirus protection and other multilayer IT security systems, she said. "Right now, we're remaining on high alert," Gorman said.

Robin Bloor, an IT and security analyst at Baroudi Bloor Inc. in Arlington, Mass., said Bugbear is particularly insidious because of its keylogger capabilities, which collect and document user input and provide it to an attacker. "That fundamentally undermines the security when it gets in there," Bloor said. ▶

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FleetBoston Building IT Command Center

Project will unify bank's systems and centralize network management work

BY LUCAS MEARIAN
ALBANY, N.Y.

BY NOVEMBER, FleetBoston Financial Corp. plans to complete a nearly \$10 million project to build an enterprise operations center that will bring all its systems and network management operations into one room and provide real-time links to a secondary data center 150 miles away.

Robert Wischnowsky, FleetBoston's chief technology officer, said the new command center will centralize network support operations that have remained fractured following acquisitions by the Boston-based company. He added that he expects to be able to cut FleetBoston's IT staff by an unspecified number and increase the amount of floor space available at its primary data center here by 3,500 square feet — two benefits that should produce a return on investment within a year.

FleetBoston has become one of the 10 largest banks in the U.S. by buying more than 150 firms during the past 20 years — a growth strategy that Wischnowsky said will continue. But in an interview at the data center this month, he said merging systems became a standardized process, but the networks supporting FleetBoston's flagship banking business and its credit card services and capital leasing subsidiaries are currently separated from one another.

A Matter of Trust

"We've had firewalls in between [networks] because no one trusted each other," Wischnowsky said. FleetBoston plans to bring the nonbanking operations onto its consolidat-

ed network and "drive the standardization of processes across the company," he said.

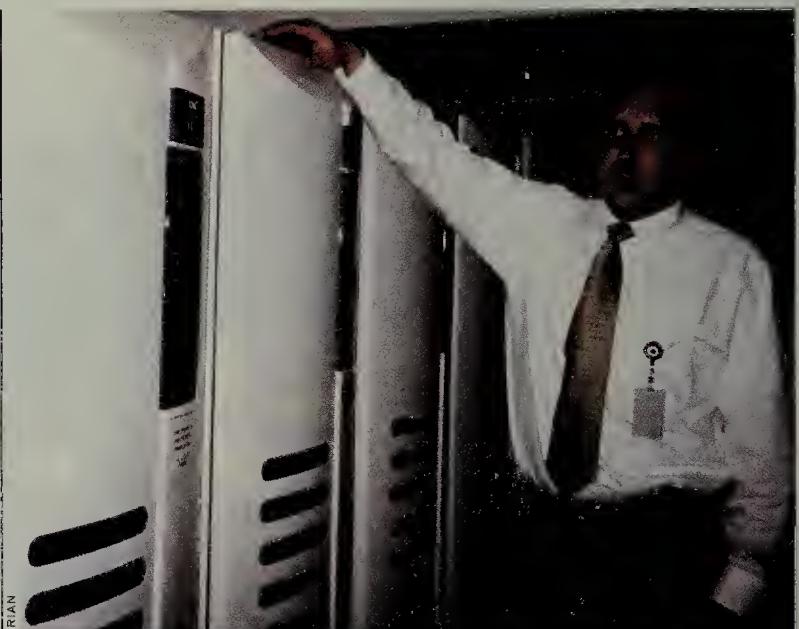
For example, the company in April went live with IBM's Tivoli Business Systems Manager software after an 18-month rollout. Ed Glenning, who manages FleetBoston's enterprise systems, said the tool is being used by systems administrators to centrally monitor and control application and database servers, batch processing jobs, and mainframe CICS systems.

FleetBoston's systems, corporate networks and the network that supports its 3,400

ATMs are managed with different software tools by workers in separate locations — the first two are in adjacent rooms at the Albany data center, and the ATM network is in another building in Albany.

But Glenning said that by November, he expects to consolidate all the systems and network management activities on Tivoli software and relocate the management operations to the new command center, which is being built within the Albany data center.

A Ridgefield Park, N.J., facility will be expanded as a backup data center and will share FleetBoston's data processing workload and act as a disaster recovery site. IT workers at both facilities will be able to



ED GLENNING says FleetBoston will consolidate its systems and network management on Tivoli software and relocate management operations.

operate every key system, from network servers and routers to management software, Glenning said.

Avivah Litan, an analyst at Gartner Inc. in Stamford, Conn., said operations center consolidations are "monumental" tasks.

On the plus side, consolidation efforts cut down on potential points of failure and should produce efficiencies by introducing an enterprise-wide monitoring and alert system, Litan said. "The goal is to walk into a control room and see one network," she added. ▶

Sprint Exiting Web Hosting But Will Help Users Migrate

BY MATT HAMBLEN

Sprint Corp. last week announced that it will wind down its unprofitable Web hosting operations nationwide, making it the second major vendor to exit that business this month.

Sprint's move came just one week after London-based Cable & Wireless PLC said it would abandon the U.S. market for Web hosting services [QuickLink 38994]. Although they were disappointed by Sprint's planned shutdown, some of the company's customers said they're relatively well prepared for the closing.

"We may lose some sleep over losing Sprint, but we've lost a provider before and had zero downtime," said Chris Sloop, chief technology officer at AWS Convergence Technologies Inc. in Gaithersburg, Md. He noted that AWS dropped Exodus Communications Inc. as its Web hosting

firm in 2001 after Exodus filed for bankruptcy protection, a process that resulted in its assets being bought by C&W.

Within hours of Sprint's announcement, several of its rivals e-mailed Sloop with offers of replacement hosting services. He added that AWS, whose WeatherBug online weather alert service has 23 million registered users, already was splitting its Web hosting between Sprint and Verio Inc. in Englewood, Colo.

Sprint said it will phase out Web hosting operations at

eight facilities located in Atlanta, Boston, Dallas, Denver, Los Angeles, New York, Sacramento and Santa Clara, Calif.

Two additional hosting centers in the Kansas City, Mo., area and Reston, Va., will become corporate data centers that support other network services offered by Sprint.

Sprint said its Web hosting revenue totaled about \$60 million in the 12-month period that ended March 31. The company said it will help hosting customers migrate to other vendors before exiting the business. Sprint plans to lay off about 500 workers as part of the shutdown, with most of the cuts expected by year's end.

Penton Media Inc. in Cleve-

land has a two-year hosting deal with Sprint that expires in December, said Scott Pennock, manager of Internet development at Penton.

Sprint hosts about 70% of the company's Web sites, and Pennock said he's a satisfied customer. But, he added, the planned pullout gives Penton "a wonderful opportunity to re-evaluate our strategy" of outsourcing so much of the online operations.

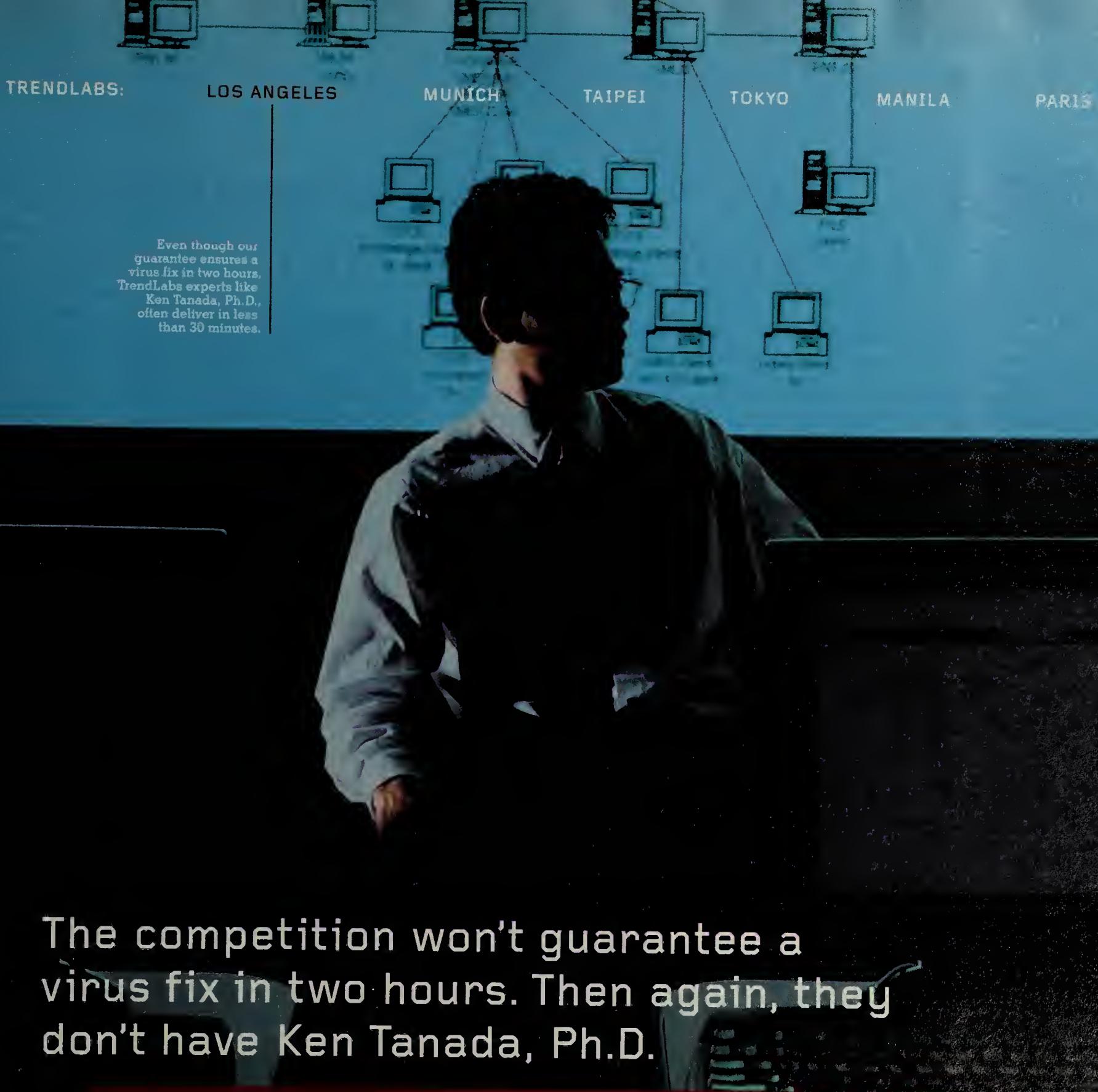
The back-to-back withdrawals by Sprint and C&W are remnants of the dot-com collapse as well as the continuing clampdown on IT spending driven by the gloomy economy, said Ted Chamberlin, an analyst at Gartner Inc. in Stamford, Conn. He said Web hosting still isn't a profitable business for many vendors, even though Gartner predicts that nearly \$5 billion will be spent worldwide on hosting services this year.

Sprint also recently named a new CEO and may be ridding itself of an unprofitable unit in hopes of attracting potential buyers, Chamberlin added. ▶

Is Your Web Hosting Firm Shutting Down?

Here are some tips on how to deal with a possible loss of service:

- Put contingency plans in place, including backup service providers that you can quickly turn to if needed.
- Review your contracts to determine what your exit rights are and what levels of service you're entitled to.
- Don't automatically jump ship, because alternative hosting vendors could be facing business problems as well.



The competition won't guarantee a virus fix in two hours. Then again, they don't have Ken Tanada, Ph.D.

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Not on our watch.

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April 2003
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Enterprise
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BRIEFS**3Com to Lay Off 10% of Workforce**

3Com Corp. plans to lay off 10% of its workers over the next six months, with the deepest U.S. cuts coming at its Santa Clara, Calif., location. The networking vendor had about 3,900 employees at the end of its third quarter in February. The layoff announcement came two weeks after 3Com warned that its fourth-quarter sales would be lower than expected.

Dell, EMC Extend Disk Array Deal

Dell Computer Corp. and EMC Corp. extended by two years a deal under which Dell resells Hopkinton, Mass.-based EMC's Clariion disk arrays and manufactures the low-end CX200 model. The two companies said the agreement, originally a five-year deal when it was signed in late 2001, will remain in effect through December 2008.

Investment Firm To Purchase Corel

Corel Corp., which develops the WordPerfect office software suite and desktop graphics applications, said it's being acquired by San Francisco-based investment firm Vector Capital Corp. for about \$124 million (U.S.) in cash. Corel CEO Derek Burney said the Ottawa-based company is expected to remain largely unchanged, but he added that some layoffs are likely.

Short Takes

i2 TECHNOLOGIES INC. said that it has prepaid a \$61 million promissory note and extricated itself from the lease of an office building that the struggling software vendor vacated in January. . . . San Francisco-based Linux server vendor **PENGUIN COMPUTING INC.** said it's buying **SCYLD COMPUTING CORP.**, an Annapolis, Md.-based maker of clustering software.

CeBIT America Debuts, Defying Show Slump

Organizers halve attendance forecast; hope focus, format will provide appeal

BY STACY COWLEY
NEW YORK

WITH MARKETING budgets drying up and trade-show attendance shrinking, this summer seems a quixotic time to launch a new IT conference. But this week, Germany's CeBIT übershow will make its U.S. debut, with an enterprise focus and a European format that organizers are counting on to set it apart from its troubled brethren.

The project has already suffered from the continuing economic slump. A year ago, show organizer Hannover Fairs USA Inc. forecast 40,000 attendees for its debut of CeBIT America. Now, the company hopes to attract 20,000. Exhibitor numbers are also lower than the 400 to 500 originally forecast, with 361 signed on.

But show executives said they're confident CeBIT America will prove its worth to visitors and vendors — confident enough to sign a five-year reservation contract with the Jacob K. Javits Convention Center in New York.

B2B Focus

CeBIT America will be a tightly focused business-to-business show. Instead of aisles of booths lining the show floors, organizers said they're arranging exhibitors into clusters of related technologies, with numerous lounge areas available on the floor to promote business discussions.

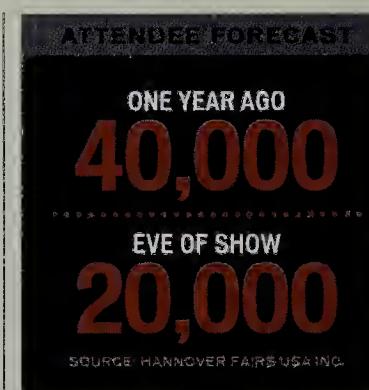
Storage, networking and wireless products will be prevalent at the show. Hewlett-Packard Co. is planning to preview upcoming handheld devices and notebooks and will join with several partners to demonstrate new storage

devices (see story below). Sony Electronics Inc. will focus on storage as well, bringing new libraries and tape drives to the show.

Microsoft Corp. plans to push its Tablet PC software, while 3Com Corp. will show firewall products and network management technology. PalmSource Inc. plans to make several announcements about new mobility, security and systems management offerings.

Vote of Confidence

Persuading vendors to spread their trade-show dollars around and take a chance on the debut of CeBIT America has gone fairly smoothly, ac-



cording to organizers. "Most of the significant players have said yes to us," said Mark Dineen, managing director of CeBIT America. "That's a huge vote of confidence."

One vendor said CeBIT's brand name was an important factor in its decision to exhibit. "They have a great track record, and we hope they'll be bringing that to the U.S.," said Albert Chu, vice presi-

HP Plans Disk Array That Supports Serial Interconnects

Hewlett-Packard plans to announce at CeBIT America that it will ship by mid-2004 a disk array that can mix serial attached SCSI drives and lower-cost serial Advanced Technology Attachment (ATA) devices.

HP said the upcoming array will have a single serial backplane that can support both kinds of drives, plus an interface that will let the different disks replicate data to one another for backup and recovery purposes. The mix-and-match capabilities could potentially lower storage costs by allowing IT administrators to provision capacity based on the type of data that's being stored.

Daniel Morreale, CIO at North Bronx Healthcare Network in New York, recently talked to HP about the array for potential use in storing medical images and documents from clinical studies. "I can definitely see the value of it," he said. "We'd like to get rid of our tape environment."

HP's disk array would let North Bronx Healthcare store images and electronic documents on serial ATA disks that cost roughly the same as tape devices and provide end users with online access to the data, Morreale said. But he added that the health care provider is currently installing an EMC Centera array, which uses parallel ATA disk drives to store data in a nonrewritable format.

Mark Almendinger, enterprise infrastructure manager at Huntington Bancshares Inc. in Columbus, Ohio, said the financial services firm could use the promised HP array to take advantage of inexpensive serial ATA drives for applications like its Notes e-mail systems. Data from heavy-duty transaction applications could be stored on higher-performance serial attached SCSI devices, added Almendinger.

HP is partnering on the mixed array with disk drive maker Sea-

gent of business development at Sunnyvale, Calif.-based PalmSource.

The IT show market has been a harsh one lately. Event cancellations are common, and Comdex parent Key3-Media Group Inc. has filed for bankruptcy protection. Comdex's former general manager, Bill Sell, defected and is heading brand and customer development for CeBIT America.

According to Sell, CeBIT America isn't expected to make a profit this year. Princeton, N.J.-based Hannover Fairs USA is prepared to give it several years to break even, he said. "It's a long-term investment," Dineen added.

"This is a completely different model, and people are responding to that," he said. "We just have to remember the focus of the event: quality, quality, quality; enterprise, enterprise, enterprise."

Cowley writes for the IDG News Service. Computerworld news editor Don Tennant contributed to this story.

gate Technology LLC in Scotts Valley, Calif., and network adapter vendor Adaptec Inc. in Milpitas, Calif. Seagate and Maxtor Corp., also in Milpitas, have both said they plan to begin shipping serial attached SCSI drives to hardware vendors by year's end.

A 1.0 version of the serial attached SCSI specification was ratified by a technical committee last month and is in the midst of a 45-day public comment period. One of the key features built into the new storage interconnect technology is its compatibility with serial ATA drives [QuickLink 36708].

HP is the first vendor to formally announce plans to develop an array that mixes the two technologies. But Robert Grey, an analyst at IDC in Framingham, Mass., said the product promised by HP is only the first of what will be "a total industry flip over time" to such devices.

- Lucas Mearian

Sun's Gosling Discusses State of Java

BY CAROL SLIWA
Sun Microsystems Inc. Vice President James Gosling, the creator of Java, last week spoke with Computerworld about the company's latest Java activities. Excerpts follow:

Those who have been to previous JavaOne conferences have noted the declining attendance. Do you think that signals waning interest in Java? I don't think there's any interconnection between the population decline and what's going on in the Java world. The socioeco-



Q&A

nomic state of the world pretty much explains everything, I think. If you talk to people about the energy of what they are doing, I actually think it's higher today.

Sun talked a lot about working to boost the Java population from 3 million to 10 million developers. Do you think that's a realistic goal? I think it's a very realistic goal. It's a tough one, and a lot depends on how you think of the goal. You've got this huge educational system that is feeding the world with pre-educated

Java developers. If you counted up all the people who have learned to program in Java, we are way ahead of 10 million.

Over what time frame will 10 million be achievable? I'd be happy in five years. It wouldn't be at all surprising if it happened a lot faster than that.

Like many companies, Sun is introducing a tool, code-named Project Rave, that seeks to reduce the complexity of developing in Java. Have you been involved in that? Yeah. We tend to come out of the gate with something that works really well at large

scale, and at small scales it's too complicated.... So there's a dual goal here. One is to make it so that the people at the lower end can use a lot of this infrastructure that was really designed around high-end deployments. There's also this other subtext to it, which is that the things that start small, if they succeed, they always become large. So with these tools, you can do systems that start small, start easy, but they can grow up and turn into big sophisticated systems. ▶

MORE GOSLING

To read the full interview with the father of Java, visit our Web site:

 **QuickLink 39196**
www.computerworld.com

Continued from page 1

Java

has reached the point where market pressure would ensure that no "bully" could succeed in introducing incompatible technology that could fracture a developer community that has grown to value Java's consistency and interoperability.

"My personal feeling is that we're over the edge, but I also feel a little nervous about that," Gosling said. "There are still all kinds of opportunities for mayhem."

Not Ready for Leap

One prominent executive who isn't ready to take the leap that Gosling favors is Jonathan Schwartz, executive vice president of software at Sun. He said the problem with open-source is the "tyranny of the volume leader."

"If Java was open-source, Microsoft could take it, deliver it as they saw fit and drive a definition of Java that was divergent from the one that the community wanted to be compatible," he said. "And to the victor would go the spoils of that nefarious action."

Sun formally established the Java Community Process (JCP) in 1998 to develop and revise Java technology, and it now claims that more than 650 members participate. Under

the JCP, intellectual property is protected by a license that requires anyone using a Java spec to demonstrate compatibility with the technology's reference implementation.

Even though Sun has worked to make its standardization process more open — and, along with JCP members, to allow for more technologies to be made available under an open-source licensing and development model — it has yet to make core elements of Java open-source, Gosling said.

Sun's lawsuit claiming that Microsoft Corp. violated its contract by trying to introduce a version of Java that was incompatible with its specifications has made some colleagues particularly sensitive to the open-source issue, Gosling said. He added that there are still enough differences of opinion at Sun, which tends to be a consensus-driven company, that he can't predict when or if Java will be made open-source.

"There are days when I feel like it's going to be tomorrow. There are days when I feel like it's going to be never," Gosling said. "If I talk to the lawyers involved in the Microsoft case, I always come back completely horrified, [thinking] if we ever do this, we're screwed."

The open-source debate over Java is nothing new at Sun. Gosling and others at the company acknowledged that the discussion started long before the growing popularity of the open-source Linux operating system caused a commotion in the industry. But the debate has heated up more recently, Gosling said.

Rob Gingell, chief engineer at Sun and chairman of the JCP program, said an argument

erupted via e-mail about a month ago among about 100 Sun field engineers who work with customers.

On the open-source question, they wondered, "Why don't we just say yes?" But he said that on further examination, he realized that they were referring more to the open-source style of development than the intellectual property issues associated with open-source.

"Given its importance to the future of my company and our shareholders' stake in our company, I'm not willing to be risky with it," Gingell said.

"I'm going to want to understand it and be able to be definitive about it within a reasonable risk profile before I'm willing to let that go."

Gosling said he didn't become swayed that Java was ready for open-source until about a year ago, and he said

he's not convinced he's right. He said he has made his opinion known internally for quite some time, although he hasn't made a point of discussing his views publicly.

"We actually do open-source a lot of stuff — but not the core bits," Gosling said. "And we've talked about slicing up the core so that some of it's open-source, and by and large, that isn't an easier problem than doing the whole thing."

Schwartz said the Java.net online community that Sun introduced last week is "filled to the gills with open-source projects with Java." He also said that he, Gosling and others just published the Java Research License, which allows more open-source development on core parts of Java.

"Anyone who wants to experiment with core parts of Java — everything under the guts of the [virtual machine], the language constructs themselves — is more than welcome to do so," Schwartz said. "But they can't introduce them into the commercial domain."

Gosling, too, is well aware of the potential pitfalls if Sun takes the open-source step. "Open-source ways of dealing with software work really well so long as you get this sort of collegial atmosphere," he said. "If you happen to have a bully on the block who is really strong, it doesn't work." ▶

Opinions on Open-Source Java Mixed

Some of the prominent vendors that work on Java standards through Sun Microsystems' Java Community Process (JCP) favor Java being turned over to the open-source community. Many corporate developers, however, have some strongly divergent opinions on the matter.

The following is a sampling of these developers' views:

■ Clay Mathur, senior staff programmer, Charles Schwab & Co., San Francisco: "When you're trying to make reusable code, it's better to have standards. I prefer the standardization that the Java Community Process provides, rather than everybody doing their own thing."

■ Ramu Kannan, director of information technology at Humana Inc., Louisville, Ky.: "Sun is not the company that it used to be. Java should be open.... Also, Sun is driving a lot of Java in a certain direction, which I don't think the rest of the community may want."

■ Tom Van Atta, manager, Unix/Basis Services, The Scotts Co., Marysville, Ohio: "I think the JCP is the right way to maintain it. If it becomes open-source, it'll be too hard to control."

■ Bob Celmer, technical fellow, AutoZone, Memphis: "I would like to see it go open-source, because there are those of us who would like to have greater visibility into how the technology works — particularly with new things."

- Carol Sliwa

JAVA DEBATE

Read what others have to say about the open-source Java issue:

 **QuickLink 39201**
www.computerworld.com

Continued from page 1

Audits

sidiary plans to add a centralized contract manager "who can also assist with compliance issues," Kaul said.

Jane Disbrow, an analyst at Stamford, Conn.-based Gartner, said IT departments generally do a lousy job of monitoring their software agreements. "If your tech support people are like most tech support people, record-keeping is not their forte," she said.

Toyota Motor Corp. recently inked a global desktop and server enterprise licensing agreement with Microsoft that's supposedly "audit-proof," said Charlie Clark, a technician at the automaker's Toyota Technical Center USA Inc. unit in Ann Arbor, Mich.

Microsoft enterprise license holders "are less likely to be audited" than other users of

HOW TO

Preparing for Software Audits

CLOSELY COMPARE your software licenses with billing invoices submitted by vendors.

KEEP copious records of your software contracts to guard against possible errors by vendors.

SPELL OUT your audit rights in contracts, including who will conduct and pay for an audit and how it will be done.

DEMAND that you be given at least 30 days' advance notice of a planned audit.

STIPULATE that you should get at least 90 days to resolve compliance problems without incurring any financial penalties.

SOURCE: GARTNER INC., STAMFORD, CONN.

its software, noted Gartner analyst Alvin Park. But Park added that he has been told by

several Gartner clients that they were asked by Microsoft to conduct internal audits on server-based products that aren't covered by the enterprise agreements, including SQL Server and server versions of Windows.

Rebecca LaBrunerie, a Microsoft product manager for worldwide licensing and pricing, didn't dispute Park's comment. However, she did say that Microsoft has pulled back on the number of audits it conducts over the past year. "That doesn't mean that we won't talk with our customers about how many licenses they have," LaBrunerie added.

Jacqueline Woods, vice president of global pricing and licensing strategy at Oracle, said the company has kept the number of customer audits it conducts steady at about 400 annually for the past three years. That works out to less than one-tenth of 1% of Ora-

cle's installed base of 200,000 customers, Woods said. In addition, at least 25% of the audits Oracle does are requested by the customers themselves, she said.

El Segundo, Calif.-based Candle Corp. confirmed that it has become much more aggressive about trying to curb piracy of its software. Since launching a formal program a year ago, Candle has audited more than 1,000 of its 5,000 or so customers, said Steve Gerrity, assistant vice president of contracts and administration.

"We view audits as a cost-effective way to defend our intellectual property," Gerrity said. But he added that Candle has seen an increase of 1% to 2% in revenue as a result of the audit program.

Peter Beruk, director of antipiracy at Network Associates Inc. in Santa Clara, Calif., said the security software vendor has also recently increased the

number of compliance-related audits it's conducting. But it's "not sending out audit letters to 50 customers a week," he added. "We're doing this more on a case-by-case basis."

Even so, some attendees said the audit threat could hurt user-vendor relationships. "It's like the vendor is saying, 'We don't trust you,'" said Pat Kitchen, director of IT administration and coordination at Pactiv Corp., a Lake Forest, Ill.-based packaging manufacturer. ▶

If your tech support people are like most tech support people, record-keeping is not their forte.

JANE DISBROW, ANALYST,
GARTNER INC.

Continued from page 1

RFID

and standardization hurdles before widespread usage can begin.

Wal-Mart's move is expected to result in the deployment of nearly 1 billion RFID tags with embedded electronic product codes (EPC) for tracking and identifying items at the individual crate and pallet level, said Pam Kohn, vice president of the Bentonville, Ark.-based retailer's global supply chain operations.

But even Wal-Mart's initial RFID effort will be narrowly focused. Although RFID tags can gather and track a variety of data related to products, materials and more, Kohn said Wal-Mart will concentrate at first on using the technology to improve inventory management in its supply chain.

"We're still determining all the benefits," Kohn said. "We don't want to overburden ourselves." She added, though, that even if Wal-Mart were to collect no new data with the RFID tags, the efficiency and accuracy with which items

can be tracked would be huge benefits in and of themselves.

RFID uses low-powered radio transmitters to read data stored in tags that are embedded with tiny chips and antennas. Proponents of the technology say such "smart" tags can store more detailed information than conventional bar codes, enabling retailers and manufacturers to track items at the unit level.

RFID tags have been available for several years, but adoption has been slow because the tags are more expensive than bar coding and because standards are lacking to ensure interoperability between tags and data readers.

Gary Robertson, executive director of global infrastructure at Delphi Corp., a Troy, Mich.-based maker of automotive electronics systems that uses RFID devices in its manufacturing operations, said Wal-Mart's decision to deploy the technology "will legitimize it and push it into the mainstream."

"The fact that the largest company in the world is publicly adopting EPC open standards should give companies

confidence that the day of a single, interoperable RFID system is close at hand," said Kevin Ashton, executive director of MIT's Auto-ID Center in Cambridge, Mass.

The Auto-ID Center is working with Uniform Code Council Inc. (UCC) in Lawrenceville, N.J., and EAN International in Brussels to develop a standardized EPC format for storing data on

RFID's Challenges

PRODUCTION CAPACITY:

■ Wal-Mart says it will need 1 billion RFID tags in 2005 to support its planned use of the technology.

■ Chip makers can't make that many devices now and may have to build new production facilities.

PRICING:

■ Wal-Mart officials are insisting that the RFID tags cost no more than 5 cents each.

■ The devices currently sell for as much as 10 times that amount, according to MIT and Texas Instruments Inc.

RFID tags. That effort got another boost last week when Microsoft Corp. said it will join Auto-ID Inc., a not-for-profit joint venture set up by UCC and EAN to oversee the still-evolving standards.

Cost Possibly \$50M

Wal-Mart didn't say how much the effort would cost it or its suppliers or whether new systems will be needed to support the technology. But even at the 5-cents-per-tag price that Wal-Mart said it plans to seek from vendors, the cost of the tags alone would total \$50 million.

According to the Auto-ID Center's Web site, RFID tags typically cost at least 50 cents each, and RFID readers sell for \$1,000 or more. Big companies could require thousands of readers for all their factories, warehouses and stores, the site says.

Wal-Mart isn't the only retailer putting its faith in RFID. London-based Marks & Spencer PLC, one of the U.K.'s largest retailers, is rolling out RFID technology in its food supply chain operations. The project involves putting 13.56-

MHz RFID tags on 3.5 million new plastic trays used to ship products, according to Keith Mahoney, the company's food logistics controller.

Marks & Spencer has subjected the tags to a variety of temperature, moisture and distance tests before deploying them, Mahoney said during a presentation at the conference. Although the lack of common RFID protocols and standards remains an issue, "we could not allow the lack of them to hang up the project," he added.

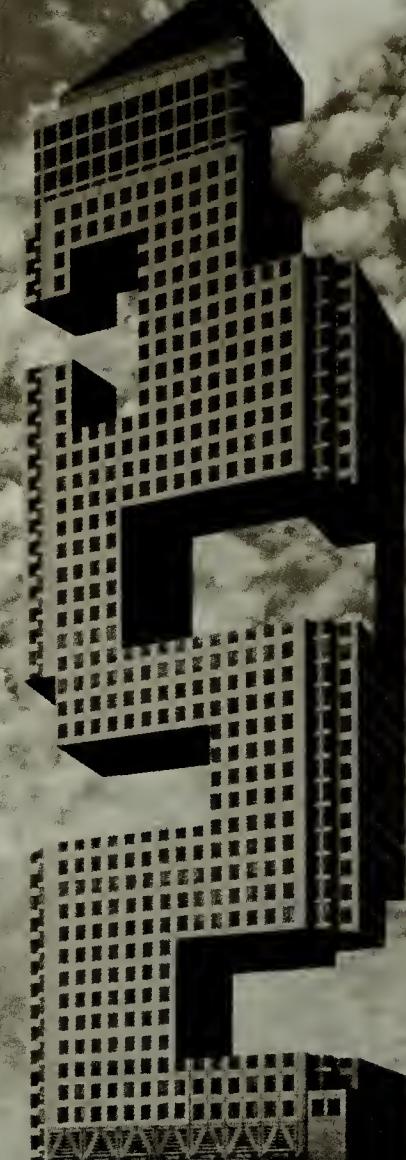
RFID can yield "a huge benefit" for some companies, said David Hutchins, senior director of enterprise systems at Kraft Foods North America Inc. in Northfield, Ill., and a member of the Auto-ID board. However, Kraft is still evaluating the technology's potential value in its own supply chain. "The first thing is figuring out the business case," Hutchins said. ▶

CHIP ISSUES

Meeting Wal-Mart's RFID tag needs may not be easy, Texas Instruments warns:

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Surveys Show No Big Boost Likely in IT Budgets This Year

Forrester, Meta say many users plan to spend less than budgeted amounts

BY THOMAS HOFFMAN

Stock markets are strengthening, and consumer confidence has increased in recent months. But thus far, those developments aren't having much of a positive impact on corporate IT spending plans.

In fact, a respective 23% and 30% of North American companies surveyed separately by Forrester Research Inc. and Meta Group Inc. said they plan to shrink their tech spending below the levels they had originally budgeted for this year.

Nearly 70% of the 700 respondents to Cambridge, Mass.-based Forrester's survey

indicated that they're holding steady on their IT budgets (see chart). But the survey results, released this month, led Forrester to drop its overall 2003 IT spending forecast from the 1.9% average budget increase it projected in December to a mere 1.3% gain.

"If you look at IT spending from a Buy, Hold or Sell perspective right now, most companies are taking a Hold approach," said Howard Rubin, executive vice president at Stamford, Conn.-based Meta.

The Meta study, which was completed last month and involved 500 companies, found

that 41% of the respondents plan to leave their 2003 IT budgets unchanged. Rubin said the remainder were almost evenly split: 30% plan to cut their budgets, and 29% intend to increase spending.

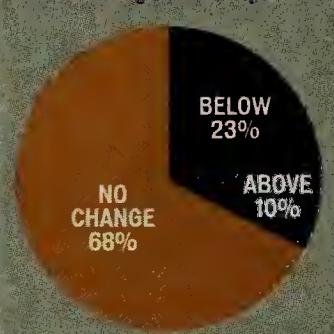
Holding Steady

The Hold approach to IT spending maps with Corning Inc.'s plans. "At this point, we aren't changing our full-year target," said Richard Fishburn, CIO at the Corning, N.Y.-based maker of optical fiber, cables, photonic technologies and other products.

But Fishburn added that Corning's IT budget called for higher spending in the first half of the year to fund ongoing productivity programs,

Midyear IT Spending Outlook

Do you plan to spend above, below or in line with your original IT budget for this year?



BASE: 700 North American IT decision makers total adds up to more than 100% because of rounding

SOURCE: FORRESTER RESEARCH INC., CAMBRIDGE, MASS.

such as the application of ISO 9000 practices at the company's global IT shared services center. In addition, Corning consolidated help desk activities at three regional sites earlier this year. As a result, IT spending for the rest of the year will drop off from the first-half level, Fishburn said.

Genesee & Wyoming Inc., a Greenwich, Conn.-based operator of short-line and regional railroads, built a marginal increase into its IT budget this year. That's because the company's annual revenue is projected to grow by \$20 million, and IT spending is pegged to equal 2% of revenue, said Mike Meyers, vice president of information management and technology at Genesee & Wyoming. Meyers added that he doesn't expect any changes to be made to the budget. ▶

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CRM Vendor Adds Development Hosting

BY MARC L. SONGINI

CRM software vendor Salesforce.com Inc. has announced a hosted application development service that makes Web services technology and widely used tools like Microsoft Corp.'s Visual Studio .Net available to software developers via the Internet.

Salesforce.com CEO Marc Benioff said users of the Sforce offering will also be able to access databases, a document management system and user authentication services without having to invest in or maintain any software themselves. San Francisco-based Salesforce.com will support Sforce users with the same IT infrastructure that's used to run its hosted online applications, he said.

Sforce can be used to build homegrown systems or to customize Salesforce.com's applications and integrate them with third-party products, Benioff said. Monthly fees are \$50 per user and \$1 for each megabyte of data stored at Salesforce.com's data center, although the first three users and 10MB are free for a year.

Microsoft, Sun Microsystems Inc. and BEA Systems Inc. have agreed to support Sforce with their development tools, and Salesforce.com said a similar deal is in the works with Borland Software Corp. Sforce also incorporates XML and Web services standards like the Simple Object Access Protocol and the Web Services Description Language.

Sforce sounds promising to Sheldon Tkatch, a senior project manager at Garrett Aviation Service Centers, a Tempe, Ariz.-based division of General Electric Co. The provider of airplane maintenance and modification services uses Salesforce.com's applications, and Tkatch said he wants to tie them to Garrett's Oracle customer database.

Currently, linking customer data to the hosted applications is a time-consuming process that requires end users at Garrett to extract the information

in batches or reports and then enter it manually. Doing the necessary integration work in-house would be "technologi-

cally prohibitive," Tkatch said. But that process looks more feasible with Sforce, he added. Wendy Close, an analyst at

Gartner Inc. in Stamford, Conn., said Sforce targets application developers with the software-as-a-service concept. The service will most likely appeal to large companies that need more functionality than

Salesforce.com's applications provide, she said.

But Close added that she's not sure how much buy-in Sforce will get at first, outside of companies that plan to use Salesforce.com's applications. ▶

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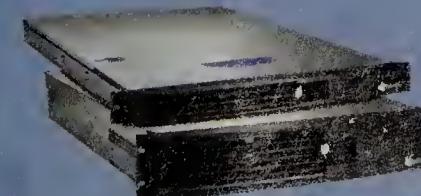
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MARYFRAN JOHNSON

Larry's Grandstand Play

ORACLE'S HOSTILE TAKEOVER BID for PeopleSoft has sparked a flurry of media coverage in the past 10 days — predictably so. The story has the classic elements of a made-for-TV movie: a dramatic surprise attack, high-stakes finance with antitrust overtones, executive power struggles and a quirky cast of combative CEOs.

But the undisputed star of this show has been Oracle CEO Larry Ellison, an insatiable attention-seeker who obsesses over the tactics of Japanese feudal warlords and who shopped for his fourth wife on the *Oprah* show a few years back.

Now he's shopping for software market share and customer body count among PeopleSoft's thousands of enterprise users, who play the sympathetic but largely helpless victims in this drama.

Why victims? Because their fates are tied to what could become a dead-end software platform.

Larry has made it clear he has zero interest in PeopleSoft's portfolio of applications, strategic product road maps or even the technology fueling it all. So, if he sidesteps the potential antitrust concerns and kills off one of his main competitors, development of new PeopleSoft applications will halt. And the inevitable upgrade march to Oracle's E-Business Suite software will begin.

When CIO Jim Prevo of Green Mountain Coffee Roaster called that prospect "a disaster" [QuickLink 38959] and predicted that Oracle ownership would "destroy much of what we value in PeopleSoft," he was speaking for many of his peers. At a time when IT organizations are trying to standardize platforms, simplify architectures and keep budgets under control, the specter of a forced migration off strategic business software is horrifying.



MARYFRAN JOHNSON is editor in chief of Computerworld. You can contact her at maryfran.johnson@computerworld.com.

But what does Larry care? On the customer relationship front, Oracle has a spotty record. The vendor has feuded publicly with its own user group, and two years ago, it was forced by vociferous customer outrage to abandon a controversial database pricing plan.

When news of the hostile bid broke, PeopleSoft CEO Craig Conway, an

Oracle veteran, sputtered his outrage over "classic Larry bad behavior," which included blabbing to the media about supposedly secret talks the two had last year about merging. Just four days before Larry turned the spotlight on himself, Conway had announced a pending \$1.7 billion acquisition of J.D. Edwards. That move was intended to catapult PeopleSoft

over Oracle, making it the No. 2 business software vendor behind SAP, which holds 54% of the market.

That scenario now seems unlikely. Even if Oracle's bid fizzles, it may undermine PeopleSoft's future — especially in the eyes of potential customers. As Wall Street analysts noted, the bid increases the perception that PeopleSoft is in trouble and sows confusion and doubt among customers and prospects. Checking out a vendor's financial stability is a standard business practice for CIOs today, and PeopleSoft just got pushed into the wobbly red zone.

I asked an expert on IT sourcing what PeopleSoft customers could do to protect themselves if Oracle has its way, and unfortunately, there isn't much. Bart Perkins, a managing partner of Leverage Partners and a *Computerworld* columnist, said that the best customer protections reside in the software contract. A good one will include explicit performance metrics and service guarantees, details about promised functionality and a promise of product support for a certain number of years.

But product plans and support can blow up quickly after an acquisition, so that piece of paper may be worthless if Larry's grandstand play succeeds. Here's hoping it doesn't. ▀



PIMM FOX

Site Monitors Get Real

WE KNOW the value of system management software that monitors the performance and availability of Web sites. The goal is to keep sites and robust applications up and running within service parameters set by business and IT.

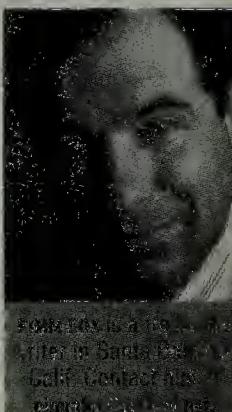
But most of the performance tools provide synthetic measurements. They score a site or application against a set of scripts or conditions created by the IT department to mirror users and transactions. For example, if a customer goes to a travel site and types in a query, the measurement software will acknowledge that the site is running as long as the customer gets an answer. But there's no way of knowing if the information was indeed what the customer wanted.

Until now.

Complementing traditional system management technology available from the likes of Mercury Interactive is software from San Francisco-based TeaLeaf Technology Inc., a spin-off from SAP. Designed to monitor actual site and application experience, IntegriTea aggregates information about the application and determines if it's returning appropriate data. Already on board are Priceline.com, Citizens Bank of Rhode Island and Mary Kay Inc.

IntegriTea applies a filter to the Web server and clones information when it hits the server. A copy of each request is made and pushed to an IntegriTea server, which generates a cookie for each session. This makes it possible to follow the application trail of the user. The results are assembled visually so you can record the page a visitor was on, his IP address, the ports, the browser type — almost any information you'd want from a user session.

Event modeling permits preset alerts, so if, say, 10 transactions fail to reach completion within a specific period of time, you can be alerted. Identifying problems early and specifically also makes it easier to effect fixes.

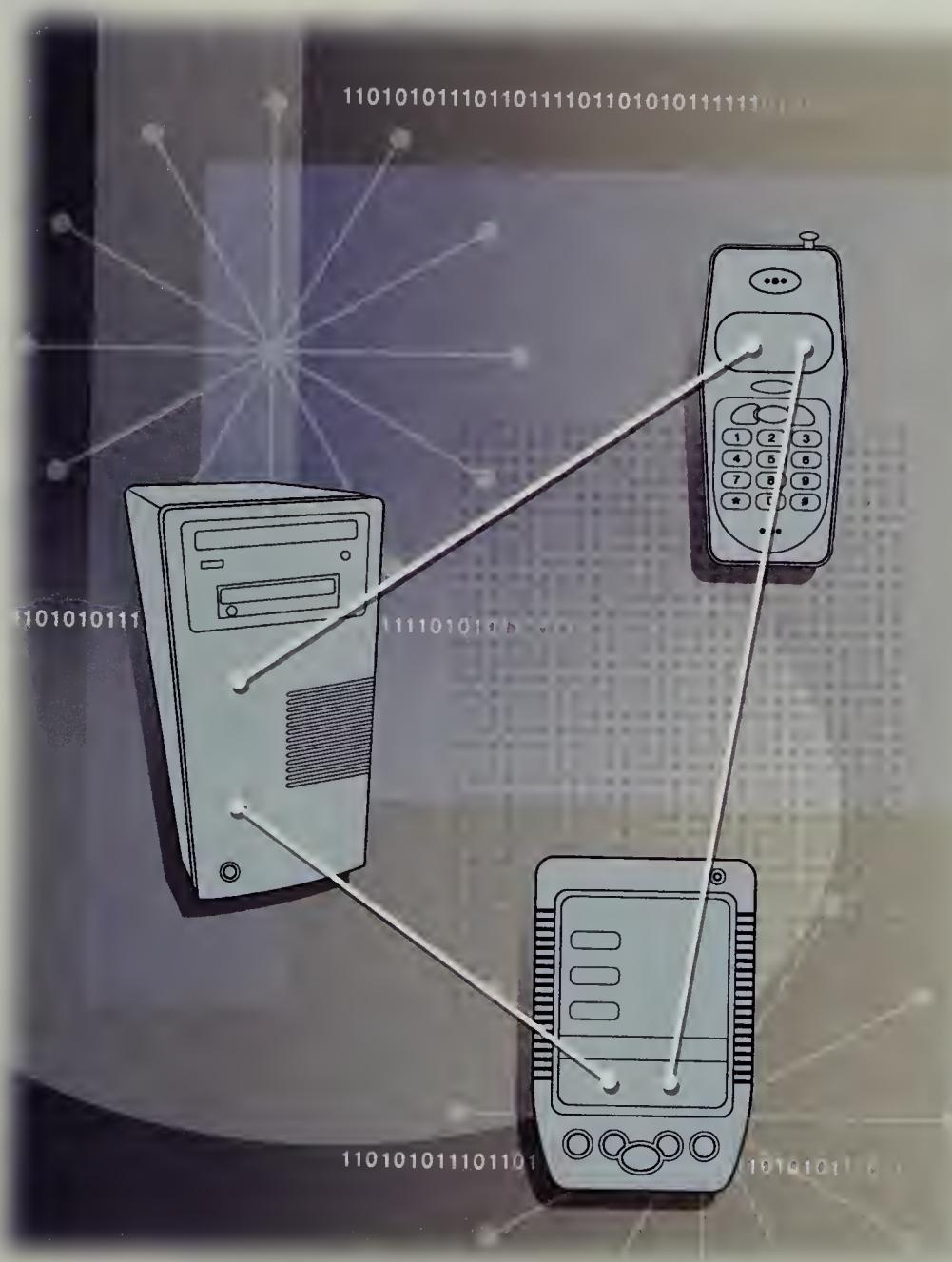


PIMM FOX is a principal at Pimm Fox Solutions, Calif. Contact him at pfox@pimmpfox.com.

White Paper

June 16, 2003

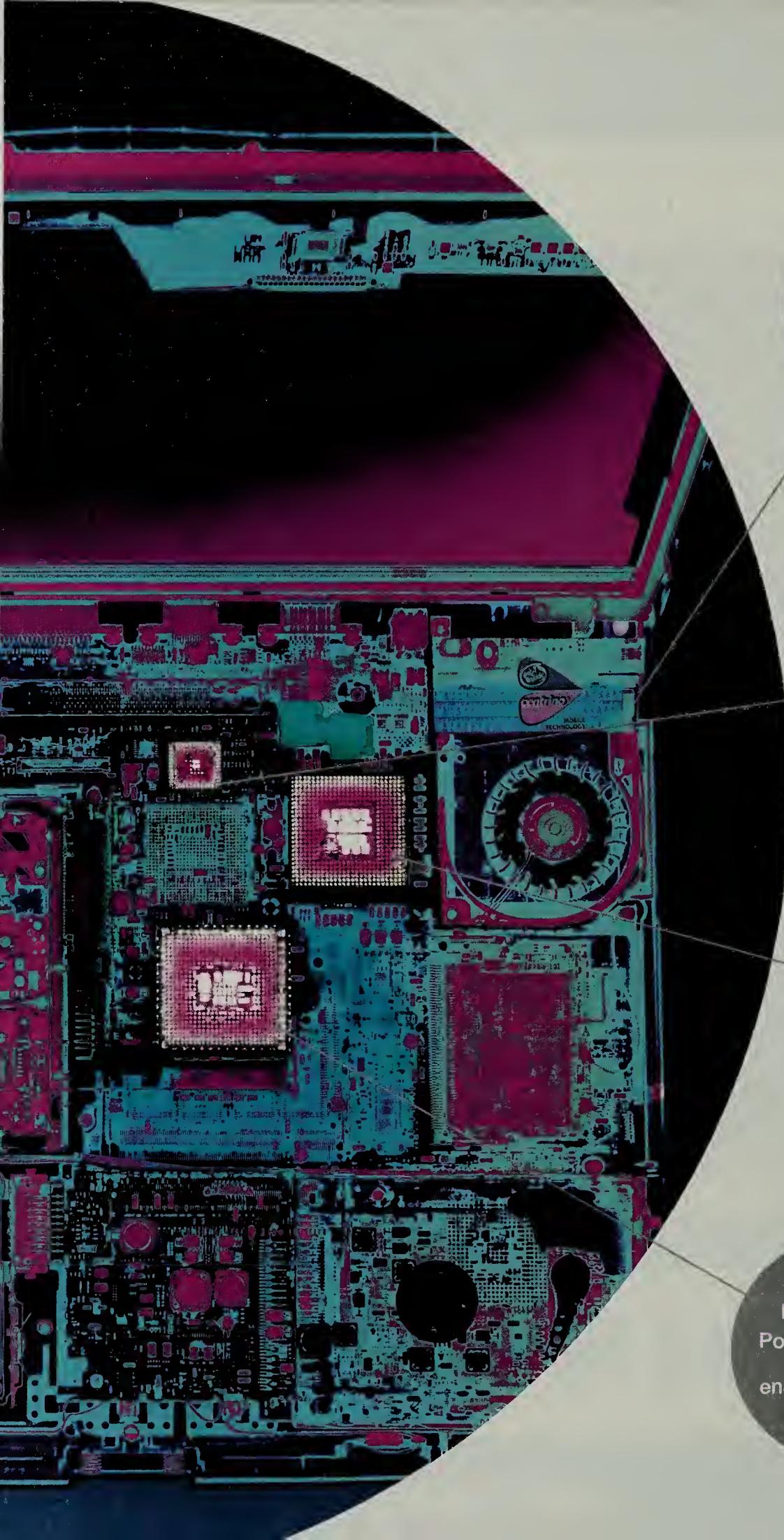
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Managing and Securing Mobile & Wireless Resources

As the mobile workforce continues to grow, IT organizations turn to new tools that let them support a dizzying array of devices

Intriguingly, both vertical enterprise workers (such as healthcare, education and financial services staff) and horizontal enterprise workers (such as consultants and sales representatives) will soon make up a predominantly mobile workforce. According to research firm IDC, more than two-thirds of all U.S. employees will be classified as mobile by 2006.

Mobile workers will travel and work in various private and public environments, such as campus buildings, industrial plants, client sites, airport executive lounges, hotel rooms

and their residences. They will seek wired and wireless data network access over often unreliable, unsecured and bandwidth-constrained connections to maintain their mobile productivity.

Consequently, the enterprise network will be extended into campus and mobile environments to provide these workers seamless access to

their mission-critical enterprise applications, email, personal information managers (PIMs), corporate databases and other mobile resources. This means IT managers and help desk staff will have to extend their own services into the same campus and mobile environments to support not only mobile workers' data access needs, but also a proliferation of mobile and wireless devices.

According to Framingham, Mass.-based IDC, there will be over 112 million enterprise mobile devices for IT support staff to service in 2004. Many of the devices, such as personal digital assistants (PDAs) and smart phones, cost up to \$500.

However, due primarily to the inefficient extension of IT support in mobile environments, the total cost of ownership (TCO) of mobile and wireless resources often equals five to 10 times the average capital cost of the devices themselves. For example, Stamford, Conn., research firm Gartner Inc. estimates the TCO for a PDA at \$2,700, but that cost soars to \$4,400 if the PDA is enabled with a wireless adapter.

Various mobile resource management (MRM) solutions address the data communication and computing needs of the mobile workforce and relieve related support pains. MRM refers to the "lifecycle management" of mobile, wireless and remote devices and related software, content and data, with a primary focus on enterprise applications. MRM solutions centralize mobile resource management, drive increased mobile workforce productivity and decrease the TCO for mobile resources.

MRM Market

As the mobile workforce increases and mobile and wireless devices proliferate, the MRM market is expected to grow at a proportionately high rate. IDC estimates it will top \$715

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million in revenues by 2006, a 42.6% compound annual growth rate over \$121.3 million in 2001. Similarly, Gartner forecasts a five-year growth rate of 40% in MRM market revenues, from \$135 million in 2000 to \$750 million in 2005.

MRM Solutions

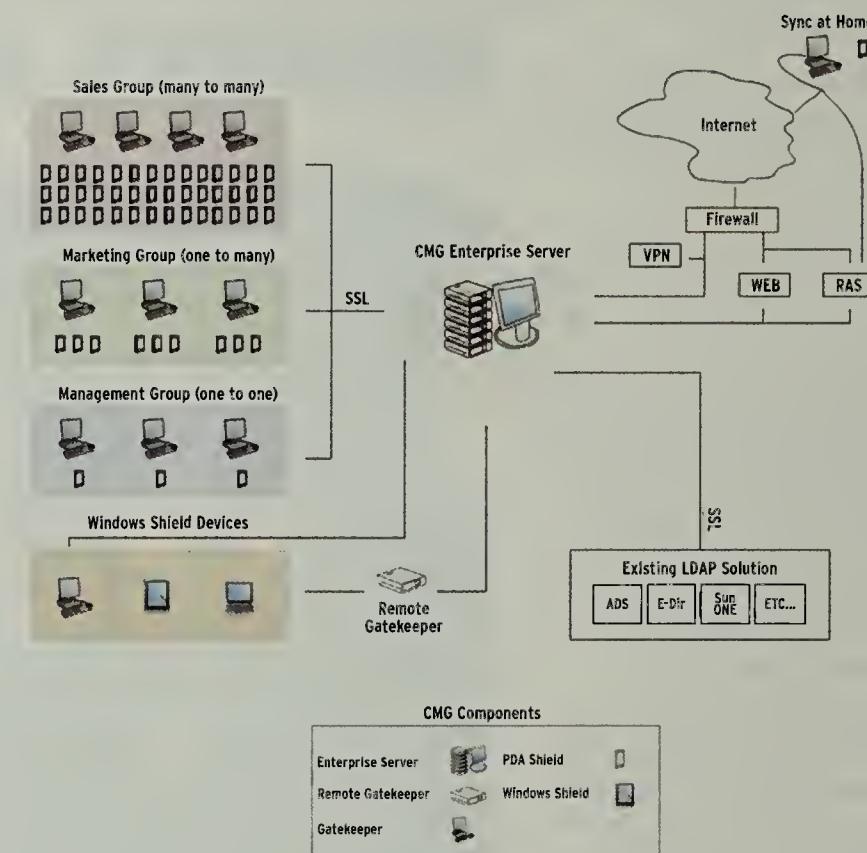
MRM solutions implement product lifecycle management and help IT control and centralize the monitoring, recording, installing, configuring and upgrading of mobile, wireless and remote device systems, operational software and mission-critical applications. The primary MRM features are systems management, software management, data management, security management and centralized administration.

MRM solution architecture includes a server, a management console, a proxy service and a device client. The MRM platform can be integrated with legacy management systems like authentication servers (e.g. RADIUS), user directory servers (e.g. LDAP) and desktop management platforms (such as Microsoft's Systems Management Server, or SMS). Figure 1 shows a typical MRM architecture, this one from Credant Technologies' CREDANT Mobile Guardian (CMG) system diagram.

MRM Vendors

As Figure 2 shows, MRM vendors consist of heritage desktop management (e.g. Novell or Tivoli), remote control (e.g. Altiris or XcelleNet) and database synchronization (e.g. Synchrologic or Sybase) solution

Figure 1. Typical MRM architecture - Credant's CMG solution



Source: MobileTrax

providers—collectively known as “mobile device management” vendors—in addition to mobile device security vendors, such as Wavelink and Senforce Technologies.

Most MRM vendors have extended their heritage product features to provide end-to-end MRM solutions, including security features. These extended MRM features are added to vendors’ product suites through internal research and development, cross-vendor licensing and merger-and-acquisition strategies. For example, Novell, a heritage desktop man-

agement vendor, acquired Callisto, a heritage remote control vendor, to extend Novell’s ZENworks product functionality.

Systems Management

Systems management functions allow IT support staff to deploy, manage and troubleshoot mobile and wireless systems. Key systems management functions include asset management, operating systems migration and license management.

- **Asset management.** Asset management functions enable the

monitoring, tracking and reporting of mobile and wireless hardware and software. The data is stored in Open Database Connectivity (ODBC)-compliant data sources, such as Microsoft SQL Server, for the purposes of license management, software deployment and TCO management.

- Operating system migration.** Operating system migration provides a pre-migration assessment of the user's software and hardware landscape, including a snapshot of the computer personality setting. Post-migration status reporting and security patching are also used after the installation is complete and the per-

sonality settings are restored. Most current operating system migrations involve upgrades of Windows 9X/NT to Windows 2000/XP.

- License management.** License management functions include the auditing of user devices to determine the status of their software licenses. Software usage information is used to determine the number and type of applications, as well as redundant and unused software licenses. Additionally, software license contracts can be managed with built-in notification policies in cases in which licensing amounts have been exceeded, as often happens.

Software Management

Software management functions allow IT support staff to provide policy-based deployment, management, troubleshooting and upgrade of mobile and wireless operating software and mission-critical applications. Key software management functions include software installation and updates, configuration and troubleshooting.

- Installation and updates.** Software installation and updates can be planned based on asset management information and user profiles. Queries can be used to group mobile and wireless devices that contain

Figure 2. MRM Vendors

MRM Vendor	Web Site	MRM Heritage	Primary MRM Product
Aether Systems	www.aethersystems.com	Data Synchronization	Aether ScoutSync
AirPrism	www.airprism.com	Remote Management	The AirPrism Suite
Altiris	www.altiris.com	Remote Management	Client Management Suite
Bluefire Security Technologies	www.bluefiresecurity.com	Device Security	Bluefire Enterprise Manager
Credant Technologies	www.credant.com	Device Security	CREDANT Mobile Guardian
Extended Systems	www.extendedsystems.com	Data Synchronization	XTNDConnect Server
IBM Tivoli	www.ibm.com/software/tivoli	Desktop Management	Tivoli
ManageSoft	www.managesoft.com	Desktop Management	ManageSoft 6.5
Marimba	www.marimba.com	Desktop Management	Desktop/Mobile Management
Mobile Automation	www.mobileautomation.com	Remote Management	Mobile Lifecycle Management Suite
Novadigm	www.novadigm.com	Remote Management	Radia
Novell	www.novell.com	Remote Management	ZENworks for Handhelds
ON Technology	www.on.com	Desktop Management	ON iCommand
Pumatech	www.pumatech.com	Data Synchronization	Enterprise Intellisync
Rapport Technologies	www.rapporttechnologies.com	Remote Management	Rapport 4.0
Senforce Technologies	www.senforce.com	Device Security	Senforce Shield
Sybase	www.sybase.com	Data Synchronization	i-Anywhere m-Business Platform
Synchrologic	www.synchrologic.com	Data Synchronization	Synchrologic Mobile Suite
Targus	www.targus.com	Device Security	Targus DEFCON MDP
Vaultus	www.vaultus.com	Device Security	Vaultus Mobile Platform
Wavelink	www.wavelink.com	Device Security	Wavelink Avalanche
XcelleNet	www.xcellenet.com	Remote Management	Afaria

Source: MobileTrax

newly installed software or require software upgrades, and automatic installations can be scheduled. For example, Rapport Technologies' Rapport 4.0 can update the client down to the BIOS level—a new level of update capability.

- **Configuration.** Devices can be configured to ensure a standardized and authorized deployment of software and to eliminate employee-installed applications and related rogue applications. Device buttons, menus and power settings can also be configured.

- **Troubleshooting.** Troubleshooting functions include the monitoring of installed software, the detection of missing or corrupted files and the distribution of software patches and replacement of missing files—all completed in the background of a communication session.

Data Management

Data management functions allow IT support staff to ensure reliable data transmission across various data networks, such as wired and wireless LANs and WANs and the Internet. Key data management functions include database synchronization, bandwidth management, data compression, checkpoint restart and byte-level differencing.

- **Database synchronization.** This allows for wired and wireless synchronization of mission-critical data and applications, such as PIMs and email, and includes backup-and-restore functionality.

- **Bandwidth management.** Bandwidth management functionali-

ty enables background diagnostic analyses, software upgrades and file transfer by allocating limits to the amount of bandwidth used during a communication session.

- **Data compression.** This is automatically implemented based on the bandwidth limitations of the wired or wireless connection.

As a significant number of vertical and horizontal enterprise workers travel and work in mobile environments, IT support staff will have to provide them with seamless, secure mission-critical data and applications.

- **Checkpoint restart.** Checkpoint restart enables interrupted data transmissions to resume at the point of interruption when a wireless connection is lost.

- **Byte-level differencing.** This differencing enables changes and updates only (as opposed to entire files) to be transmitted during file distribution.

Security Management

Security management functions allow IT support staff to implement

data, user, device and network security based on mobile and wireless security policies. Wherever possible, the security policies should be integrated with wired security policies and should be designed to adapt to changing environments. Security management functions include data encryption, user authentication, location-aware management, theft protection and other popular desktop PC security solutions.

- **Data encryption.** Mission-critical data is protected during transmission using HTTP and Secure Socket Layer (SSL)-based encryption methods. The Advanced Encryption Scheme (AES), a U.S. government-approved data encryption algorithm (up to 256-bit key security), will soon replace other limited encryption algorithms such as the RC4 stream cipher in wireless LAN systems.

- **User authentication.** User information stored on directory servers, such as Microsoft Active Directory, can be used to grant users access to mission-critical applications and data.

- **Location-aware management.** Device security solutions should be location-aware and automatically open and close the device's adapter ports, based on the changing environment, the user's service preferences and the security policies.

- **Theft protection.** Biometric access (e.g. fingerprint reader), motion sensors and power-on passwords protect idle and unattended devices from potential theft.

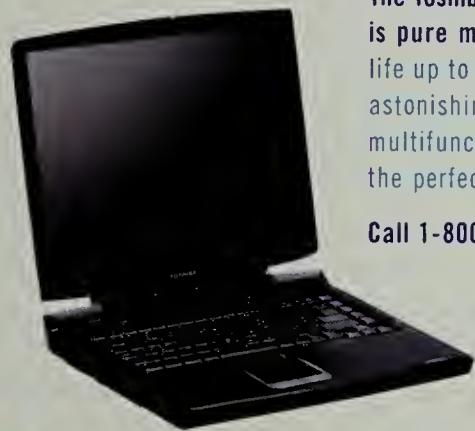
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solutions, such as virtual private networks (VPNs), personal firewalls and anti-virus software applications, can be implemented by IT organizations to protect the mission-critical data and applications on mobile computing devices.

Centralized Administration

The centralized administration of today's MRM solutions can help IT support staff efficiently and effectively control the management of mobile resources. Centralized administration functions include console management, remote control and legacy platform integration.

- **Console management.** A management console allows IT support staff to deploy, manage and update systems, software and data from a Web-based interface.

- **Remote control.** Remote-control software enables IT support staff to view, operate, diagnose, configure and maintain mobile and wireless devices over the Internet or a wireless network using a centralized console and without user intervention. The function has traditionally been used to control remote machines, such as point-of-sale terminals, kiosks and utility meters.

- **Legacy platform integration.** MRM solutions should always be integrated with desktop management platforms in order to ensure the centralized and consistent policy-based management of both fixed and mobile enterprise resources. Legacy platforms include management servers (some examples include Microsoft's SMS and Hewlett-

Packard Co.'s OpenView Service Desk) in addition to directory servers such as LDAP and Microsoft's Active Directory.

Conclusion

As a significant number of vertical and horizontal enterprise workers travel and work in mobile environments, IT support staff will have to provide them with seamless, reliable and secure mission-critical applications and data. Moreover, IT organizations will be faced with the challenge of supporting a proliferation of mobile and wireless devices, remote

terminals and nearly endless related operating software.

The rapidly expanding universe of MRM solutions, which include systems management, software management, data management, security management and centralized administration features, will greatly help enterprise IT organizations efficiently procure, deploy, configure, monitor, upgrade and secure mission-critical mobile resources. The MRM solutions will efficiently manage and secure mobile resources, resulting in an increase in mobile worker productivity and a decrease in TCO.♦

About MobileTrax

MobileTrax LLC is a Cupertino, Calif.-based professional services firm that focuses on the mobile computing and wireless data communications markets. MobileTrax provides market research and consulting services regarding the enterprise and consumer markets. The MobileTrax Enterprise IT Service provides vendor-sponsored monthly in-depth reports regarding important mobile and wireless topics, including "What IT Needs to Know," which gives IT groups specific recommendations on what they must know to succeed in mobile and wireless deployments.

MobileTrax publishes two free industry newsletters. "Inside Mobile" provides editorial analysis and insights regarding important topics in mobile and wireless and is published on the first and third Mondays of the month. "Mobile Letter" covers insights regarding new products and services and is published on the second and fourth Mondays of the month. For more information, visit www.mobiletrax.com or call (650) 248-9366.

MobileTrax is headed by J. Gerry Purdy, Ph.D., a globally recognized authority on mobile computing and wireless data communications. Dr. Purdy is also a General Partner at Diamondhead Ventures, an early-stage venture capital firm.

MRM: An IT Support Staff Perspective

Many enterprise IT support staffs aren't prepared to enforce mobile and wireless security policies; efficiently provide seamless access to mission-critical applications and data; and support the proliferation of mobile and wireless devices. MRM solutions address the mobile and wireless "pains" of enterprise IT support staffs, as demonstrated by the following deployments.

S.H. Leggitt: Centralizing the Management of Handhelds

The increased use of handheld devices by the mobile workforce presents various challenges to IT support staffs. They must manage their mobile and wireless inventories and deploy, upgrade and maintain the mission-critical applications and content from a central management console.

S.H. Leggitt is an industrial products manufacturer. The company is headquartered in San Marcos, Texas, and provides LP gas regulators, hose assemblies, custom brass fittings and plumbing components for the LP gas, RV and plumbing markets. Naturally, the company employs a significant number of consultants and sales representatives, many of whom use handheld devices.

S.H. Leggitt needed an MRM solution that could centralize and re-

mote manage its handheld device usage, licensing and memory status as well as upgrade and distribute its mission-critical documents and content to the mobile workforce. After evaluating several solutions, the company selected Novell's ZENworks for Handhelds solution to address its mobile and wireless "pains."

Novell ZENworks for Handhelds provides automated management of handheld devices to increase mobile workforce productivity and to reduce TCO. ZENworks for Handhelds provided the S.H. Leggitt IT support staff with the following benefits:

- Remote management and security of the handheld devices through a central management console.
- Systems management, including inventory tracking; software license auditing and upgrades; and system memory monitoring and upgrades.

- Software management, including the configuration of standardized buttons, menus and settings on the mobile devices and the remote delivery of PDF-formatted content.

INTEGRIS Health: Managing the Security of PHI

Medical staffs use PDAs to retrieve, store and update protected health information (PHI). If the handhelds aren't properly managed and secured, the PHI stored on them may be carelessly exposed or lost.

The Health Insurance Portability and Accountability Act (HIPAA), which was enacted to enforce the privacy and security protection of consumers' electronically transmitted medical information, will impact many healthcare service providers and their ability to competitively provide managed and secured mobile and wireless services.

INTEGRIS Health is a healthcare management operation. The company is based in Oklahoma City and operates various medical facilities throughout the state.

INTEGRIS Health needed an MRM solution that would enable it to enforce its wireless security policies, support various handheld devices and comply with HIPAA. The company selected Credant Technologies' CREDANT Mobile Guardian solution to address its mobile and

wireless "pains."

CREDANT Mobile Guardian (CMG) addresses security issues with centrally managed policy administration and on-device user authentication and policy enforcement. CMG provided INTEGRIS IT support staff the following benefits:

- User- and role-based mobile and wireless security policy enforcement.
- User authentication (e.g. PINs or passwords), including self-service reset options and the encryption of data residing on corporate databases, and removable CompactFlash cards.
- Automated installation and update of software during synchronization and the purging of PHI from lost or stolen mobile devices.

What IT Needs to Know

As the mobile workforce grows and mobile and wireless devices proliferate, IT support staff must provide for the adequate and efficient management and security of mobile mission-critical applications and data. Key MRM strategies IT support staffers need to know are:

- Develop and implement mobile and wireless security policies that are integrated with campus and wired security policies and cover the procurement, deployment, management and security of mobile devices and mission-critical applications and data.
- Procure and deploy an MRM solution that enables system, software, data and security management through use of a central management console.
- Compare and select MRM vendors based on the relative strength of their heritage features (e.g. synchronization or device security) as well as their ability to provide an end-to-end MRM solution.

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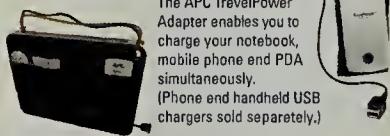
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MRM: A Mobile Worker Perspective

Mobile sales and service workers need real-time access to enterprise networks and databases to provide just-in-time sales and services based on customers' personal attributes and histories. They also need reliable and transparent troubleshooting and maintenance support. MRM solutions address the mobile and wireless "pains" of mobile workforces.

Tulsa Dental: Enabling Personalized Mobile Product Sales

Mobile sales workforces use mobile and wireless devices to provide product sales and related value-added services. These road warriors need reliable and frequently updated client information that can be accessed at regular intervals and customized to drive incremental and repeat sales.

Tulsa Dental, a division of DENTSPLY International, is a medical equipment supplier. The company is headquartered in Tulsa, Okla., and provides endodontic products to dentists. Its field sales representatives sell directly to dentists. Their broad line of offerings includes educational course enrollment, product literature, dental supplies and equipment for dentists' offices.

Tulsa Dental needed an MRM so-

lution that would enable its mobile workforce to efficiently gather sales orders from the field; periodically synchronize the content with the enterprise database back at headquar-

Tulsa Dental needed an MRM solution that would enable its mobile workforce to gather sales orders from the field, synchronize with the enterprise database and receive updated client information.

ters; and receive updated product, service and client information. The company selected Synchrologic's Mobile Suite solution to address its mobile and wireless "pains."

Synchrologic Mobile Suite helps companies lower the total cost of ownership of mobile devices while simultaneously providing controlled access to the mission-critical information needed by workers to stay productive in mobile environments. Synchrologic Mobile Suite provided the Tulsa Dental mobile workforce with the following benefits:

- Periodic or immediate transmission and retrieval of mission-critical customer information through synchronization functions.
- Current customer information, including sales histories and product and literature orders.
- Value-added service capabilities, such as educational course enrollment and mobile credit card billing.

Federated Insurance: Providing Real-Time Mobile Customer Service

Mobile service workforces require updated product or service information in order to provide the superior customer service required by enterprises seeking to compete in the challenging economy that has held sway for the past three years. Therefore,

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these mobile professionals need to retrieve updated service policies, documentation and forms in real-time if they are to respond as quickly and accurately as possible to their customers' questions, concerns and needs while in mobile environments.

Federated Insurance is a mutual property and casualty insurance provider. The company is headquartered in Owatonna, Minn., and specializes in business insurance for a wide variety of vertical markets. All told, the company employs more than 200 field marketing and service staffers, who provide in-person policy sales, loss prevention education and claims resolution.

Federated Insurance needed an MRM solution that would enable its mobile workforce to efficiently access the corporate intranet and download updated policies, forms, contracts and other mission-critical content. After evaluating a broad cross-section of potential solutions,

the company selected XcelleNet's Afaria solution to address its mobile and wireless "pains."

XcelleNet Afaria provides mobile and wireless systems and software management functions that bring not only greater efficiency, but also increased productivity and significantly improved user satisfaction. Afaria provided the Federated Insurance mobile workforce benefits that included the following:

- Rapid access to mission-critical documents and applications using the same Web-based intranet interface that's used by desktop PC users.
- Automated, seamless and efficient updates of mission-critical documents and software applications using such tools as byte-level differencing and checkpoint-restart functions.
- Automated Web-based troubleshooting, including the background reporting, repair and replacement of any files that are corrupted or missing.

What Mobile Workers Need to Know

Mobile workers must be able to access mission-critical applications, content and data to maintain their sales productivity and to ensure superior customer sales and service. Key MRM strategies mobile workers need to know are:

- Access mission-critical application, content and data with a Web-based interface that is integrated with and similar to their

desktop management infrastructure and interfaces.

- Retrieve only the updates or changes in mission-critical documents or content through efficient data management functions, such as checkpoint-restart and byte-level differencing.

- Troubleshoot and repair mobile device systems transparently through background monitoring and maintenance functions.

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Real-time monitoring can also be a boon in fraud detection. An online music retailer was able to watch for instances of fictitious credit card generation via overseas IP addresses. The software foiled an attempt to ping the server with randomized credit card numbers by checking failed entries within a three-hour time period.

Yet another use for this technology is monitoring low-volume, high-dollar business-to-business transactions to ensure that customers are always getting the information they want. A manufacturer of drill presses is using it to keep watch on inventory, delivery dates and suborders for components.

Traditional monitoring software, akin to a closed-circuit TV camera, is still necessary, but it's no replacement for having a live guard keeping watch. And more important, one who takes notes you can act upon. ▶

DAVID MOSCHELLA

IT Mature? Think Again

HAS THE IT industry lost faith in itself? In April, Larry Ellison told *The Wall Street Journal* that the computer industry "is as large as it's going to be." Google's Eric Schmidt and others are making comparisons to historical market bubbles involving canals and railroads, which were followed by relatively humdrum periods. Perhaps most aggressively, in a controversial *Harvard Business Review* article, editor at large Nicholas G. Carr argues that IT doesn't even matter anymore, and that it's rapidly losing its ability to deliver competitive and strategic advantage.

This type of pessimism has emerged during every prolonged IT market downturn. For example, in the late 1980s, when the U.S. economy seemed to have lost its edge, IT got much of the blame. I remember meeting with senior executives at IBM, who were pondering a study from a large management consulting firm that had concluded that IT really wasn't such a great business to be in and that IBM should prepare itself for a low-growth and low-profit future.

But it's been more than three years since the collapse of the Internet bubble, and it's time for all of us to put our hair shirts back in the closet. A practical first step would be to stop

referring to the IT industry as "mature," which Webster's defines as "having completed natural growth and development." Does anyone really believe that these words apply to our business?

The most obvious flaw in this surprisingly widespread idea is its total lack of global perspective. The U.S., with 5% of the world's population, accounts for some 40% of the global IT business. How could anyone use the word *mature* to describe the state of IT usage in India, China, Russia, Brazil and many other countries? Indeed, if someday the rest of the world invests in IT at even half the current per capita rate in the U.S., the global IT industry would more than triple.

I'll give pessimists the benefit of the



DAVID MOSCHELLA's latest book is *Customer-Driven IT: How Users Are Shaping Technology Industry Growth*. Contact him at dmoschella@earthlink.net.

doubt that when they describe the IT industry as mature, they are really just talking about the U.S. and perhaps a handful of other developed nations. But even here, their arguments can't withstand much scrutiny. Consider the consumer market, where radical changes can be expected once high-bandwidth Internet, 3G-style wireless and home network systems are widely in place.

Even in business, *maturity* is the wrong word. Industry researchers say IT spending now accounts for 7% to 9% of the U.S. economy. But as more business is digitized and more tasks go online, is it really so hard to imagine that in seven to 10 years, IT-based activities could comprise, say, 15% to 20% of overall eco-

nomic activity? Such a shift would allow today's U.S. IT business to more than double. And mature industries don't double every seven to 10 years.

The reality is that IT isn't just a separate economic sector like manufacturing, retail or insurance; it's an increasingly essential part of nearly every industry. It also remains the single largest source of business innovation and competitive advantage. IBM's Sam Palmisano got it right recently when he said IT spending can consistently grow from roughly 1.8 to 2.3 times the rate of the overall economy. Over time, this will result in a vast new IT landscape, which will make today's "mature" industry look primitive by comparison. ▶

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READERS' LETTERS

More Than Techies

AS A SENIOR IT executive (CIO), I am constantly amazed at the cry for "business-savvy IT executives" [QuickLink 38152]. That's because my experience has been that when IT managers attempt to exercise business savvy, they are politely but firmly informed by word or deed that they are just "technical people." It is an empty cry offered by people of little insight and less business acumen.

James D. Wells Jr.
Norwich, Conn.

a small part of the cash flows the other way? Must you have all of your money and most of ours too?

T. Reynolds
Ottawa

Regaining Luster

THOMAS HOFFMAN and Gary H. Anthes are right on with their "Tarnished Image" piece [QuickLink 38043]. IT has a big credibility problem in most enterprises. Combine that with offshoring and a weak economy, and the IT jobs recovery may be further off than most believe. IT singing its own praises is definitely part of the solution, but so is using IT to create value for the enterprise and speaking the business side's language to communicate that value. Somewhere along the line, many so-called IT professionals appear to have forgotten that it's all about managing technology for the good of the enterprise.

Leon Kappelman
Director, IS Research Center,
University of North Texas,
Dallas

IT WOULD BE interesting to see whether or not companies that have IT departments with tarnished reputations have an active project management process in place and a project management office that is backed by senior management. Too many times, I've seen project managers bullied into fixed budgets and

timelines by senior managers. This inevitably leads to projects that aren't delivered on time or within budget.

Scott Burgett
Project manager, Atlanta

Don't Forget MOM

I AM RATHER DISAPPOINTED by your article on event-driven architecture (and Gartner's take on it, but that was nothing new). The article ["Event-driven Architecture

Poised for Wide Adoption," QuickLink 38332] gives the impression that event-driven architecture is something new and that middleware packages are just about to start to support it in earnest. On the contrary, sophisticated event brokering has been a feature of message-oriented middleware like BEA Tuxedo or NCR (now also BEA) TopEnd for decades.

Dragi Raos
Managing partner, Pardus,
Zagreb, Croatia

Vendors Should Assess Themselves First

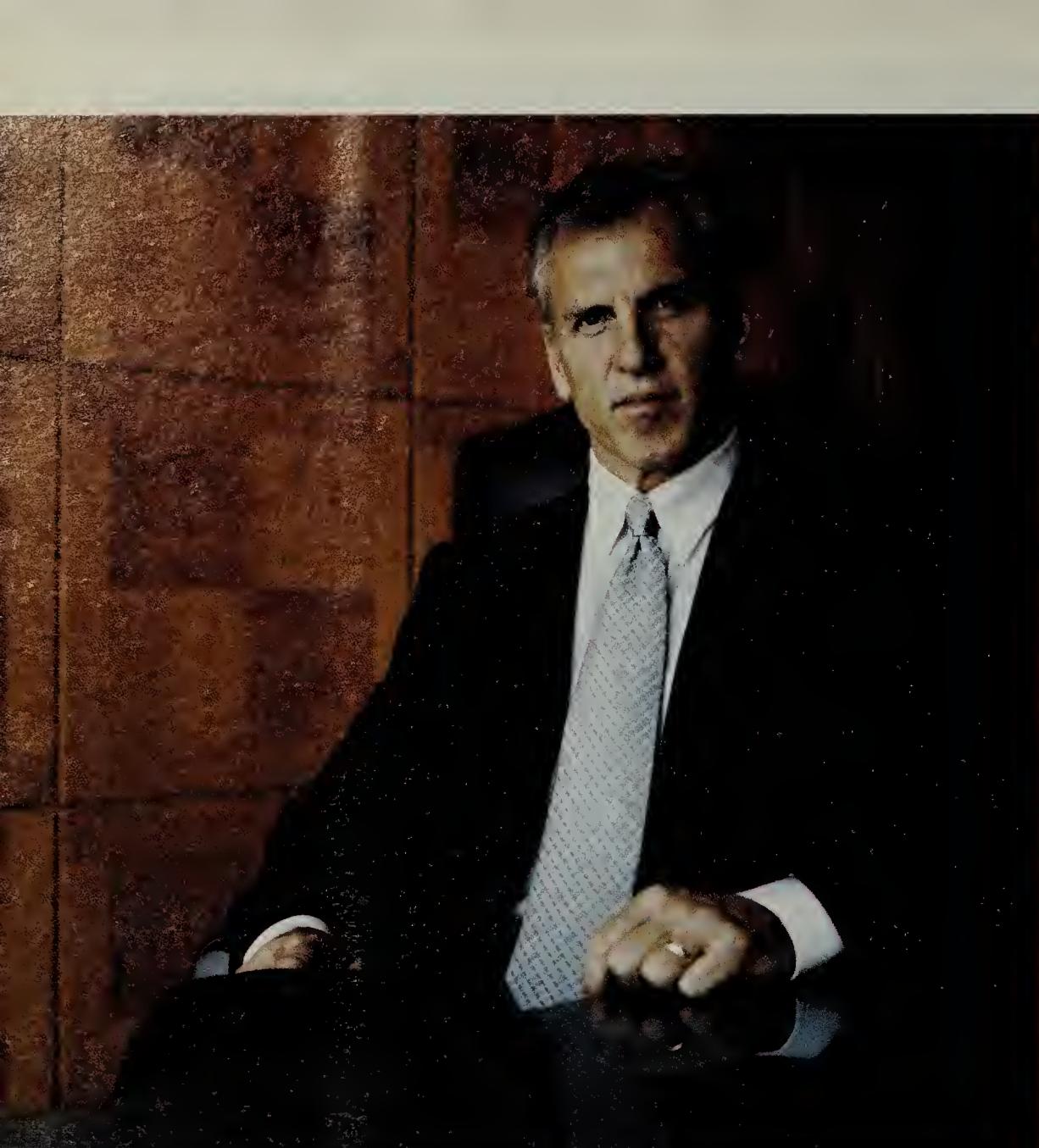
AS I READ Patrick Thibodeau's interview with Juergen Rottler, a vice president in HP's services division [QuickLink 38328], I couldn't help but smile at the headline, "Step 1: Hire a Consultant, HP Exec Says," which echoed Rottler's advice about the first step to take in adopting the on-demand model. I think Rottler is more likely saying, "Hire an HP consultant. For \$25,000, HP will study your situation in order to better help HP tell you how HP can help you – for more money." In my years as a CIO, I was always suspicious of this pattern. I think a more appealing approach (at least in the eyes of the targeted CIOs) would be for HP to invest its own time and resources to make that assessment. Why should the customer pay to help a vendor make its sales pitch? If HP truly feels it can differentiate

itself based on the strength of its "intellectual property and methodologies," it should likewise see that this assessment process is an investment worth making.

Bruce Barnes
President, Bold Vision LLC,
Dublin, Ohio

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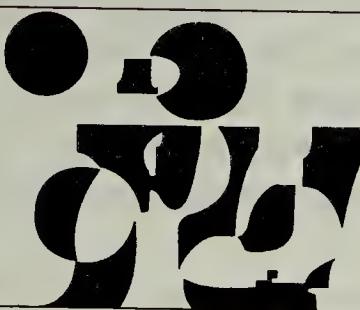
Lining Technology Up With Business

Siki Giunta, the CEO of Managed Objects, talks about her company's focus on making IT more accountable for the success of the business. **Page 30**

FUTURE WATCH

Captchas Eat Spam

Programs that distinguish between humans and machines could help block spam and contribute to advances in areas such as artificial intelligence. **Page 32**



SECURITY MANAGER'S JOURNAL Security Sweep Reveals Access Token Violations

Vince Tuesday's after-hours survey of physical security uncovers an array of policy violations, including an unguarded access token with the passnumber written on it. **Page 33**



EASTMAN'S CARROLL PLEASANT says his team learned about Web services as it went along.

Here's how two early adopters are using Web services for internal integration projects.

By Carol Sliwa

IT'S NOT HARD TO FIND companies that have dipped their toes into the water to explore how Web services might help address some of their nagging integration problems. But few have launched major initiatives of the scope at Eastman Chemical Co. and Merrill Lynch & Co.

One of the distinguishing characteristics that separates these early adopters from the mere dabblers is the systematic approach they take to building the sort of service-oriented development architecture that experts say they'll need to realize the full benefits of Web services. Some of the biggest challenges they've faced so far have been finding the right tools and establishing best practices without a well-established road map.

Eastman Chemical

EASTMAN CHEMICAL, a Kingsport, Tenn.-based maker of chemicals, fibers and plastics, is plotting the rollout of a service-oriented architecture across key legacy systems to give users more visibility and control over their business processes.

To do that, the IT department is taking stock of all of the company's application servers (which run on AIX,

Windows 2000 and Windows NT), assessing what the applications do, stripping off the user interfaces and exposing the application functions as services, says Carroll Pleasant, an associate analyst in Eastman's emerging digital technologies group.

"Once we're done, the [users] should be the ones deciding what the business processes will be, rather than having the applications determine the business process for them," he says.

Like a number of other companies, Eastman got started with Web services by focusing on a key project that would help its IT department learn about the new technology. Developers created a simple read-only Web service to give customers access to technical data in its product catalog.

The product catalog Web service, which went live about a year ago, eliminated the need for customers to screen-scrape data from Eastman's site or to download a monolithic catalog to spreadsheets. Customers instead can now go to the Web site and make a request that causes the system to send an XML-based message using SOAP over HTTP to Eastman's Saqqara Systems Inc. database. The latter then does the data retrieval and sends back the information via XML and SOAP.

With one successful project under its belt, Eastman's next big step was tackling an internal Web service it calls a management score card. The service lets the company's top 150 executives access financial, manufacturing and other data from several disparate internal and external systems for competitive analysis purposes.

Developers used Visual Basic 6.0 and Microsoft's SOAP tool kit to build

WEBSERVICES: INSIDE JOBS

EASTMAN CHEMICAL



“Anybody who gets into this deeply will find very quickly that they need a tool set for managing services. It’s as fundamental as running your data center monitoring tools.”

CARROLL PLEASANT, ASSOCIATE ANALYST, EMERGING DIGITAL TECHNOLOGIES GROUP

the interfaces to its data warehouse and other back-end systems. Pleasant notes that, in hindsight, the newer and more reliable Visual Studio .Net tool kit — which Eastman developers now use — would have been a better choice, since it generates more of the low-level plumbing code. But the team lacked experience with it at the time.

To tie together the data, Eastman developers turned to Java-based server software from New York-based Droplets Inc. to deliver a client with a rich graphical user interface that “deploys like a Web application,” Pleasant says. “The user just clicks on a shortcut and points to the application running on the server,” he says.

Not everything went so smoothly. Long before the management score card went live last December, Eastman realized it would have to figure out how to manage its growing collection of services so that programmers wouldn’t have to do checks to make sure all the services are running.

“Anybody who gets into this deeply will find very quickly that they need a tool set for managing services,” says Pleasant. “It’s as fundamental as running your data center monitoring tools.”

Eastman experimented with tools from NextAxiom Technology Inc. in Pleasanton, Calif., and webMethods Inc. in Fairfax, Va., to create a Web services management “engine” that’s more than a mere registry for the publication of services that applications can consume. The engine also needs to manage the security model, the orchestration between Web services, debugging and monitoring of the services, fail-over capabilities, caching and data transformation, Pleasant says.

When Pleasant surveyed the product landscape, he found a variety of confusing choices from small start-ups. “There’s no consensus yet as to exactly what a Web service management tool should do or what services should reside there vs. the application server,” he says. “It’s very tough, because you can’t just do an apples-to-apples comparison between these guys. Each one repre-

sents some fundamentally different approach as to how you’re going to build the service-oriented architecture.”

Another decision Eastman faced was how to “chunk” its data and whether to make “little calls to services or one big one” to compensate for the performance hits that result when data is transformed into and out of XML, Pleasant says.

To boost performance, Eastman had to learn the fine points of caching data so that multiple requests for the same information don’t trigger individual calls to the database every time.

The company has done most of its work without help of high-priced consultants, although NextAxiom and other vendors have assisted with Eastman’s near-term focus to create composite applications that tie together low-level services from existing legacy “application silos” and present the data in a view that aligns with the user’s business processes. Microsoft’s support for Web services and XML will also be helpful going forward, since Eastman is a heavy Microsoft user.

But one of the continuing challenges Eastman faces is the dearth of role models, since few have done what it’s attempting to do.

“It’s going to take a long, long time for everything to switch over to Web services and a service-oriented architecture,” Pleasant says. “We see the movement going on with almost all of our vendors. We’re confident they’re going this route. But it takes time to get there.”

Merrill Lynch

INTEGRATION HEADACHES drove Merrill Lynch to turn to Web services about one year ago as a cheaper and more efficient alternative to the middleware it uses to enable its thousands of mainframe applications to talk to its middle-tier and Web-based front-end systems.

The challenge confronting the New York-based financial services company is far more expansive than most companies will ever encounter. Merrill Lynch has 23,000 CICS programs running on its mainframes, and it’s very

difficult to integrate those programs with Microsoft’s .Net development platform, IBM’s WebSphere or any other platforms or tool sets, notes Jim Crew, director of the infrastructure and data services group.

Exposing those CICS applications with language-agnostic Web services interfaces and sending data using interoperable XML held great appeal. So Merrill Lynch created its own tool set, called X4ML, to help its mainframe programmers build interfaces and run Web services without need of XML, Java, Visual Basic or Web services skills and without having to modify the CICS programs. “There’s nothing in the marketplace that’s nearly as advanced as what we built,” says Crew.

The tool set, which the firm continually fine-tunes, has an analyzer component that looks at a compiled listing of a Cobol program, tries to figure out its I/O and automatically produces the Web Services Description Language files that represent the interface and all of the runtime metadata, says Crew.

programs. For instance, if three programs do account inquiries, only one Web service is needed to expose that function. But Crew says that’s not the ultimate objective. “The goal is lowering the cost of running the business by reusing existing resources,” he says.

Crew estimates that for every dollar spent on an application, 90 cents goes to plumbing code. “Our goal is to make sure that 90 cents on the dollar is spent on the application and 10 cents on plumbing. Web services is getting us closer to that point,” he says.

Merrill Lynch IT executives often point out that the firm cut the cost of developing an investment banking application from \$800,000 to \$30,000 by using Web services instead of traditional development methods. Crew attributes the differential to X4ML’s ability to eliminate plumbing code.

Cohen says reusing code should help to reduce the turnaround time for new projects, which often depended on developer knowledge of how to call a particular CICS transaction using lega-

MERRILL LYNCH



“Our goal is to make sure that 90 cents on the dollar is spent on the application and 10 cents on plumbing. Web services is getting us closer to that point.”

JIM CREW, DIRECTOR OF THE INFRASTRUCTURE AND DATA SERVICES GROUP

X4ML can be accessed either through HTTP synchronously or through IBM’s MQSeries synchronously or asynchronously, says Dave Cohen, a vice president in Merrill Lynch’s technology architecture group. “That’s important for helping with the goal of cost reduction,” he notes.

Venkat Pillay, a vice president in the infrastructure and data services group, says his team was apprehensive about scalability going through a CICS transaction gateway. But performance testing showed that TCP/IP and HTTP listeners in CICS provided the fastest, most scalable and efficient way to get into CICS, he says.

To boost performance, Merrill also wrote its own XML parser to run in CICS, since the off-the-shelf Java-based XML parsers were too slow, says Mike Card, another vice president in infrastructure and data services.

Card says the old system drove about 19 transactions per second, but using X4ML and Web services, the figure shot to 239 per second.

Through its work, Merrill Lynch hopes to phase out many of its CICS

cy protocols. Web service interfaces and more widely accepted programming tools will ease the process.

So far, Merrill Lynch has used X4ML in more than 20 applications running in production and several more in development. The tool has also been used to build Web services interfaces to about 350 CICS programs during the past year, according to Crew.

The company has created an X4ML directory with capabilities similar to the UDDI standard to document its Web services, but it plans to migrate to UDDI later this year.

“Once we start using UDDI, we will see the benefit of application reusability,” says Pillay. “A lot more people will be able to find each other’s services and reuse the code.”

So far, all of Merrill Lynch’s work with Web services has been internal. Crew says he expects it to stay that way for at least the near term because of the lack of security standards. But internal Web services alone can have a significant impact at Merrill Lynch.

“What a huge productivity tool,” says Crew. ▀

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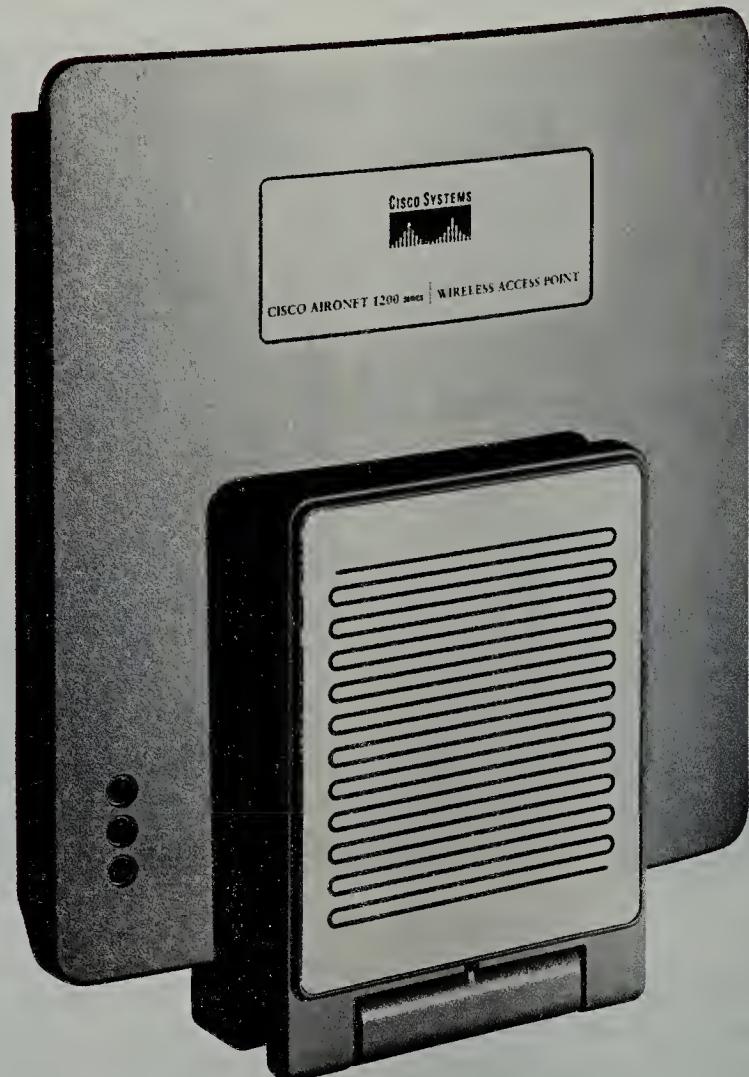
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IT'S TOUGH ENOUGH defending the IT perimeter against spyware, viruses, worms and unauthorized intrusions. But no matter how good their defenses are, companies still risk getting hurt by those they trust most: remote workers. "If anyone wants to attack, all they have to do is drop in a Trojan [horse] and wait for the person to log in," says Dennis Peasley, information security officer at furniture maker Herman Miller Inc. in Zeeland, Mich.

Personal firewalls help, but stand-alone versions don't always protect the corporate LAN adequately. For example, Peasley initially installed Zone-Alarm from San Francisco-based Zone Labs Inc. on 900 laptops. But the distributed personal firewall installations were difficult to monitor and maintain. Peasley now uses Zone Labs' newer, server-based Integrity software to centrally manage those remote personal firewalls. "With any new system we install, the main cost is not the cost of

the software, but the cost of managing it," he says. "Centralized management cuts those costs."

Stand-alone personal firewalls don't work well for corporate LAN access because end users have access to the software and tend to misconfigure it or shut it off entirely, and administrators face problems supporting and installing updates. Because the update process is time-consuming, administrators may avoid updates altogether, leaving unpatched clients open to new vulnerabilities.

"I've seen personal firewall software that was individually installed on several large computer systems, and it always becomes a mess," says Kevin Beaver, president of Principle Logic LLC, an information security consulting firm in Kennesaw, Ga. "Configurations and patches were inconsistent, and the administrators spent way too much time on the 'sneaker net,' going around to remedy problems."

The best centrally managed personal firewall systems won't let end users disable the local firewall software or

PERSONAL FIREWALL MANAGEMENT SYSTEMS

- Lock down remote personal firewall configurations
- Enforce policies
- Automatically update machines as they connect
- Automatically check and update antivirus signatures
- Allow different personal firewall settings based on location or access method

change the settings, says John Pescatore, an analyst at Gartner Inc. in Stamford, Conn. "Users will just say yes to everything, so you have to centrally manage them in a way that is invisible to the client," he says.

Some tools also integrate with antivirus and virtual private network (VPN) software. Pescatore says two of the more advanced products in this arena, Integrity and Sygate Secure Enterprise, from Sygate Technologies Inc.

in Fremont, Calif., include a back-end server that can act as a gateway through which remote-user access can be controlled (see diagram, next page).

Peasley uses that feature on his Integrity firewall system. The end user connects to the Cisco VPN 3030 concentrator, which directs the user session to the Integrity server to authenticate the client, checks that the client's antivirus software is up to date and provides any necessary updates before allowing access to the network.

Vendors of related security products and security suites have jumped in with their own centrally managed firewall offerings. These typically include tight integration with sister security products. The downside is that they may be weaker in terms of management capabilities, integration with existing directory structures, reporting features and even the level of security they offer when compared with dedicated desktop firewall management products.

Symantec Corp. in Cupertino, Calif., and Network Associates Inc. in Santa Clara, Calif., have added personal firewalls to their corporate antivirus software, as have VPN vendors such as InfoExpress Inc. in Mountain View, Calif., and Check Point Software Technologies Ltd. in Redwood City, Calif. Sticking with one vendor generally makes it easier to integrate the security products, and in some cases, they can be managed from the same console.

"If you are committed to using an antivirus product, see if they also have a firewall product so you don't have to write the code to get the parts to talk to each other," says Robert Hillary, principal at security consulting firm HawkSI LLC in Hanover, N.H. Having a single vendor for both products also

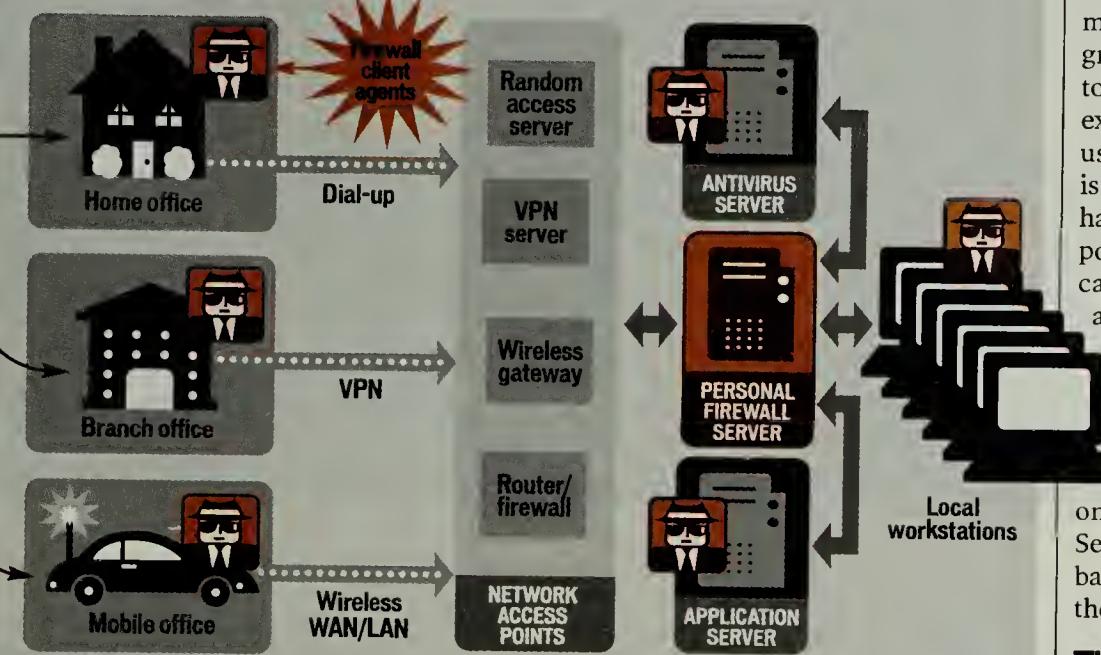
Personal firewall management systems allow centralized control and enforcement of security settings for remote users. By Drew Robb

REINING IN Personal Firewalls

Personal Firewall Plays Central Role



Personal firewall systems that can be centrally managed add an extra security layer between the VPN or other network access points and the corporate LAN. The systems can lock down and automatically update firewall settings on remote PCs, enforce policies and act as gateways, checking that user configurations, software updates and virus signatures are current before allowing access to network resources.



eliminates finger-pointing, he says.

Most organizations like to stick with familiar vendors and leverage what they already have. When the city of El Paso, Texas, needed to buy 1,000 firewalls as part of its Health Insurance Portability and Accountability Act compliance program, it chose Network Associates' McAfee Desktop Firewall, in part because the city already used McAfee VirusScan.

"We can manage the firewalls through the same interface as the antivirus software," says Francisco Sepulveda, the city's information security officer. "This makes it easy to operate and to deploy updates."

Although this ability to remotely deploy personal firewall policy updates is a key feature, not everyone chooses to make use of it. For example, a West Coast beverage company uses InfoExpress' VPN software and recently installed that company's CyberArmor personal firewall on 500 new laptops before sending them out into the field. The company uses InfoExpress' CyberGatekeeper to enforce policies, but it uses Novell Inc.'s ZENworks to deploy and manage them.

"We roll out policy updates through ZENworks, not InfoExpress' management server, because we didn't want to have multiple products out there updating different things on the laptops," explains the company's network engineer, who declined to be identified.

Most personal firewall management products are fairly easy to use. But administrators need to decide not just

what policies to enforce on which machines, but also how to apply those policies in different contexts. For example, the way in which a given user connects to the network may vary.

"People use a docking station when in the office, cable or DSL [Digital Subscriber Line] at home, wireless hot spots on the road, and dial-up when nothing else is available," says Pescatore. "The firewalls need different policies for each of these situations."

For this reason, some products support multiple sets of location-specific policies on a single laptop. Wells'

Dairy Inc., a privately held \$700 million dairy processor in Le Mars, Iowa, uses that feature with its 400 remote users running Sygate's personal firewall software.

"We can have multiple policies per user, per machine, per location. These fluidly change as the machine moves from location to location," says network architect Jim Kirby.

Even companies with a small group of remote users will benefit from centralized management, Kirby says, since administering firewalls on even a small number of remote systems is cumber-

TOOLS CREATE LOGJAM

Logging and reporting are one area where users and analysts say centrally managed personal firewalls could use improvement. The problem is that the sheer volume of entries flooding in from hundreds or thousands of personal firewalls can make the data unusable.

"A client showed me a 2-inch stack of paper and said, 'This is last week's log,'" says Robert Hillery, principal of security consulting firm HawkSI. "You need to get software that will winnow this down to a usable size for human consumption."

But even that isn't enough. Obtaining a complete picture of the network's security status requires correlating the desktop firewall log data with that provided by intrusion-detection systems (IDS) and other security and network elements. Many network systems man-

agement packages include these features. In addition, less costly stand-alone products such as Erfstadt Germany-based Adiscon GmbH's Event-Reporter, Vancouver, Wash.-based TNT Software's ELM Log Manager and Sanford, Maine-based Somix Technologies Inc.'s Logalot consolidate logs into a single view. The administrator can then set management policies that make sense of the data.

For example, an administrator might configure the software to archive the log entries for the thousands of daily port scans it detects but issue alerts for unexpected types of attacks. The administrator can then view all personal firewall log data and receive alerts from the IDS, gateway firewalls or other security systems using one console.

- Drew Robb

some. "If you have more than 10 laptops, you need a central control console. You will kill yourself trying to do it any other way," he says.

Another factor to consider is how much access to the firewall software to grant to users. The general rule is not to allow users any access, but there are exceptions. Kirby sets up his so that users can't even tell that the software is running; laptops at Herman Miller have a status icon for diagnostic purposes. But in both cases, users still can't shut off the software or change any settings.

By contrast, El Paso's users have the option to turn off the firewall. "We allow users to shut it down if they are not connected to the network, since some people use it on their personal computers at home," Sepulveda explains. But they can't log back onto the VPN without restarting the firewall.

The Next Generation

Vendors and analysts say the next generation of products will offer even tighter integration between firewalls and antivirus software so that administrators have to touch the desktop only once. Kirby says he'd like to see greater integration between firewalls and other products as well.

For example, Sygate offers simple check boxes to allow access to Windows networking and file sharing instead of having to configure multiple policies or rule sets. But it doesn't offer such a setup option for his Cisco VPN hardware. Similarly, the Cisco Systems Inc. hardware has a pull-down menu to activate support for firewalls from Atlanta-based Internet Security Systems Inc. and ZoneAlarm, but not for his Sygate system.

Gartner's Pescatore expects to see greater application awareness. Although many firewalls can block unauthorized applications from running, they don't block that application from doing things it shouldn't.

For example, although a firewall may let Outlook run on a laptop, it should block an application from e-mailing copies of itself to everyone in the user's Outlook directory. Pescatore doesn't expect to see that feature until 2005, but he doesn't advise waiting for it.

"Every laptop needs a personal firewall," he says. "It is not a luxury you can afford to do without."

Robb is a freelance writer in Los Angeles. You can reach him at robbeditorial@sbcglobal.net



Managed Objects Inc. CEO **Siki Giunta** says her McLean, Va.-based company is looking to "set a table" at which senior IT managers have a place alongside other corporate decision-makers. Giunta claims that with business service management (BSM) software and methods, CEOs and CFOs have a way to accurately align their IT systems with their business needs. According to Giunta, BSM allows IT managers to assess which pieces of technology are most critical to any given business process, and to monitor them accordingly.

Giunta spoke to Computerworld technology editor Tommy Peterson about why she thinks BSM is not just another fleeting three-letter acronym and the imperative for IT to be more closely focused on business goals.

What is business service management? It is a method and an approach so that our customers can see technology from a business point of view. When I buy a piece of technology, I should know what part of the business it's going to impact. And if that piece of technology is not available, how the end user and the business is going to be affected. It allows our customers to maximize what they really have and at the same time to deploy new technology in pieces and for the most important business processes.

Big corporations have 10 or 15 different processes that comprise 90% of the revenue. But IT people don't think that way — they think in terms of metrics, they think in terms of servers or databases or even the applications themselves. They don't see technology as a continuum and at the same time they don't realize that IT availability really affects business availability. We pro-

vide a methodology and software that changes the way IT people think about managing technology. It makes them realize quite clearly the service they provide to the business.

Can you be more specific about the technologies involved? Business service management is the climax of a series of ways of doing technology. In the '90s, after we decided, "Let's get out of the mainframes and let's go buy lots of client/server technologies," the connectivity and the network — that's the first thing people would think was most important. In the '90s, people were thinking that the network was the big thing and they bought a lot of network managers. But they realized the network was only the connectivity piece — there are a lot of things in the middle, like servers, so they went and bought the frameworks and agents that would monitor the box. But that, too, would only provide another piece of the puzzle.

What it did create was a lot of double

screens to watch. They had to screen the network and they had to watch a filter and alarms from metric managers and then they had to watch another product that would view the system. So people said, "I want to go to a single console," so they bought MOM, meaning manager of managers. What a MOM really does is just take the screen away — it allows you to filter the event, and probably you're trying to find some common events that are really affecting the business. Still, everything is in the hands of the people who understand the event list, people who can say, "Oh, I know that when this server goes down, business is affected."

What we do with BSM is we provide an integration to these two layers. We include the security and storage that impact the business. And we say instead of filtering the events, why don't you use an object layer. It has more power to all the instrumentation that

you've done, because when you instrument, if you have an object environment, you can have configuration, you can have graphical design, you can have command and control.

Instead of writing scripts to filter events, why don't you actually isolate each of the elements supporting an application and use them as objects and start building the relationships among the objects? That way you can say that one server in a business process is probably more important because, say, it hosts the databases.

What does that mean in terms of action, and in terms of the other technology? You start thinking not just availability and up or down, you start thinking in terms of state-of-the-business process. And the good [state-of-the-business process] reflects good service that IT is providing to the business. Obviously, when you're out of a good state, you're in a critical state and the service is deteriorated.

We're finding that the customers are starting to see IT from an end-user and an application point of view because obviously the end user is the element that is impacted first, and they've done a lot of testing and end-user performance and application monitoring. In fact, I would say people will see that the application is the business. Technology is actually getting nearer to the business. BSM is the totality of all the elements of technology — network systems, databases, end user, applications — and how you correlate all of that to determine a good state of the business and relate that to the optimum service that IT delivers to the business.

Your technology would seem to put IT back into the role of a support service, yet it spotlights the jobs of IT managers as crucial to making the business run better. Which way do your customers see this as cutting?

What Managed Objects provides is a dinner table where the IT people can talk to the line-of-business people. We provide enough technology and scalability for the IT people so that they benefit from what we provide. At the same time, we conflate their terminology into business terms in a way that the line-of-business understands it. The line-of-business talks about volume and talks about day and time and calendars. And those concepts can be applied to our formula so the IT people can represent them for the line-of-business.

LOOK AHEAD

For more of what Siki Giunta has to say about the future of IT and business, visit our Web site:

QuickLink 39072
www.computerworld.com



SIKI GIUNTA

Job title: CEO, Managed Objects Inc.

Age: 44

Accomplishments: Prior to accepting the top spot at Managed Objects in 1999, Giunta had spent four years as a senior vice president at Computer Associates International Inc., in charge of the company's OS/390 product line. She is also a regional director of the Women in Technology International Foundation.

Lining Technology Up With Business

Managed Objects' CEO tells how business service management software helps IT and business managers see eye to eye.



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Captchas Eat Spam

Ingenious computer tests may also advance machine vision and AI. By Jaikumar Vijayan

ON THE INTERNET, nobody knows you're a dog. Or a rogue robot program stealthily gathering personal information from chat rooms or registering for thousands of free e-mail accounts from which to blast out spam.

One way to stymie such bots is to use a captcha. Short for "completely automatic public Turing test to tell computers and humans apart," a captcha is a program that can generate and grade tests that are easy for humans to solve but very difficult for computers to crack.

Examples include words that have been precisely distorted by computers (see "Shark Attack," at right), images overlaid with other images or audio clips with background noise.

By including a captcha as part of the registration process for a free e-mail account, for instance, it would be relatively easy to establish whether the registrant is a human or a robot program.

"The human visual system and all of our experience in reading makes it possible to read images of text which computer vision systems at their best cannot do reliably," explains Henry Baird, a principal scientist at Palo Alto Research Center Inc. (PARC) in California.

The concept of using programs like captchas to deal with bots and spam on the Internet has been around since 1997. A team of researchers at what was then Digital Equipment Corp. was working on a way to deal with bots that were trying to influence the way certain sites were ranked on the com-

pany's AltaVista search engine. Researchers at the company developed and patented a character-recognition test that was used during the AltaVista registration process to weed out automated programs.

In September 2000, Pittsburgh-based Carnegie Mellon University's computer science department started developing similar programs in response to a request from Yahoo Inc.

Like AltaVista, Yahoo was grappling with rogue programs that were invading its chat rooms and illegally marketing products, stealing personal infor-

mation and spamming users. "The idea was to create a computer program that could distinguish bots from humans. The program would have to serve as a sentry, but it couldn't itself pass the very test it gives," says Manuel Blum, a professor of computer science at Carnegie Mellon.

The result was Gimpy, a captcha containing seven words chosen at random from a dictionary of 850 words and then distorted and overlaid with clutter via software. Passing the test required identifying at least three of the distorted words correctly.

A simpler one-word version of Gimpy, called E-Z Gimpy, is currently used by Yahoo on its Web site to weed out humans from bots during the registration process.

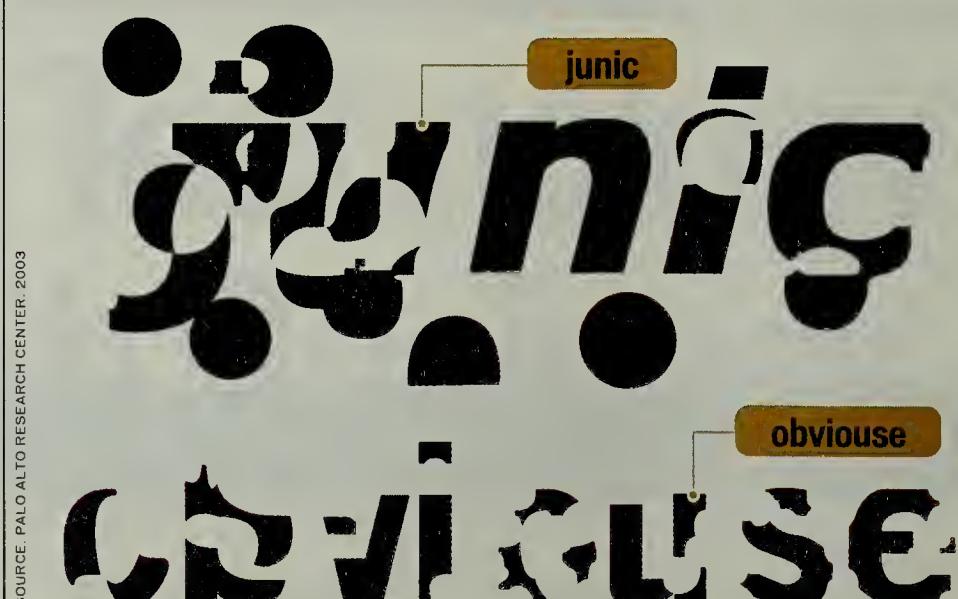
Meanwhile, researchers at the University of Hong Kong are working on a captcha that overlays audio clutter on top of a voice reading out random numbers and letters.

PARC is using its optical character recognition (OCR) expertise to write programs that can break captchas. As a result, PARC is getting a quantitative idea of the circumstances under which OCR fails. Programs capable of overcoming captchas can help build machines that are better able to recognize characters than current machines are.

FUTURE WATCH

Shark Attack

These nonsense words were generated by captcha software at PARC and then distorted so that they look as if they have "undergone a shark attack," as PARC's Henry Baird puts it. Humans can readily read them, but the best software can't.



SOURCE: PALO ALTO RESEARCH CENTER, 2003

DEFINITION

Captchas

Short for "completely automatic public Turing test to tell computers and humans apart," captchas are programs that can generate and grade tests that are easy for humans to solve but very difficult for computers to crack.

PARC's captchas, called BaffleText, rely on words that have been mutilated and distorted to the point where even the best computer vision technology can't decipher them, though humans can.

"Imagine a word that has undergone a shark attack. If you do the engineering carefully, then the characters are largely destroyed. However, there is enough left that people just look at it and see the whole word," says Baird.

Ironically, although captchas could play a useful role in dealing with rogue bots and spam, the effort to break them could prove even more valuable in the long term, Baird says.

Captchas present an interesting challenge to the artificial intelligence and computer vision communities, and research that goes into breaking them could benefit these fields enormously, he says.

Since captchas are designed to defeat the best computer vision technologies that are available today, any program that is capable of defeating captchas will contribute to better vision systems, says Jitendra Malik, a computer vision specialist at the University of California, Berkeley.

Captchas present researchers with many of the same complexities found in the real world, but in a somewhat more controlled fashion, he says. "For example, we have learned what kind of background noise is more difficult to deal with and what is not," says Malik.

Computer vision systems often try to recognize an object in a cluttered field. That could mean being able to recognize a face in a crowd or a particular piece of furniture in a room crowded with other pieces of furniture, regardless of lighting, contrast or other conditions, he says.

Malik has written programs to crack both versions of Gimpy, and that has helped him understand how to deal with background noise in an image. He says he hopes that research will yield breakthroughs in computer vision.

A similar goal is driving PARC's research, Baird says. "In a quantitative way, we will know exactly under what circumstances machine vision fails and use that to build better ones," he says.

CAPTCHA CAPABILITY

Creating captchas isn't easy. Find out why:
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Security Sweep Reveals Access-Token Violations

An after-hours walk-through uncovers an array of security problems, including an unguarded token with the passnumber clearly written on it. By Vince Tuesday

THE TERRORISM ALERTS over the past few months have dramatically increased management's focus on physical security at my company. My team doesn't directly cover physical security, but our scope does extend to all of information security, not just IT or computer security. This means we're responsible for protecting information that's printed out or in transit, as well as data that resides within our information systems.

This can lead to overlap with the physical security team as well as security gaps, so we work very closely with the other team to try to avoid these problems.

They focus on guarding people, buildings and property. They also have stronger ties to law enforcement and the government. So while they deal with things like detecting phone taps and meeting-room bugs and handle the disposal of confidential materials, we cover information labeling and disclosure processes. While they stop social-engineering attackers from talking their way onto the premises, we handle social-engineering attacks via the telephone or e-mail.

Making a Sweep

Given the increased awareness about physical security, I decided to have my team carry out one of our regular sweeps of the building. I wanted to measure the access available to malicious intruders or in-

SECURITY MANAGER'S JOURNAL

People have a high level of attachment to their work spaces: They see the space as theirs and are fiercely protective of it. Our tests might result in someone blaming us for thefts or claiming that we damaged their machines.

So I put a few simple ground rules in place. The first rule was not to touch anything. That meant no lifting keyboards and no opening drawers. However, the staff could take photographs, so there would be no debate about



I was shocked at the type and distribution of problems at our company. . . . I clearly need to do more awareness work.

siders in search of confidential information or intellectual property.

The results would be anonymous to avoid creating scapegoats. Our goal was to inform management of the current level of exposure and to make sure that we would be included in future awareness-raising activities.

First, we had to agree on procedures that wouldn't put users at risk of disciplinary action, and I needed to find a way to protect my team.

what was discovered. And to make sure we didn't get busted for snooping, we had a physical security team member with us at all times. I knew we wouldn't find everything, but at least we could do a swift, repeatable exercise and track our success at changing attitudes over time.

The good news is that only about 3% of work areas had problems. The bad news is that the problems we discovered were pretty bad. Also, I had expected problems to be concentrated within specific departments. But the security policy violations we found were evenly spread across the company.

Password Problems

Password policy violations were the most common vulnerability. One person was writing passwords on Post-it notes on his wall, crossing out old ones as they expired and adding the new. One might expect that he would have at least thrown away the old notes once he had filled them with passwords, but six password-filled Post-it notes covered his wall, all focused on a sports theme. We also found a password list that included jennifer1, jennifer2, jennifer3 and so on. You'd think that if Jennifer was changing only one number on her password, she wouldn't need to write it down.

In another area, we found several sensitive documents sitting unattended in printer output trays. These included project plans, delivery dates and internal memos. All had been clearly marked "confidential," although I can't be sure if the documents were just incorrectly marked or a true information security risk.

More troubling was the discovery of several two-factor

remote access tokens that users had left sitting on their desks. The technology is designed to cope with that eventuality, since you need both the changing code displayed on the token and a passnumber to gain access. I don't think the devices have any resale value, so the risk of theft is low. But at \$75 each, they shouldn't be just lying about.

The most frightening thing I found was an access token that had a four-digit number written on the front. I can only assume that was the passnumber for that token. A thief would still need to know the user name to do anything malicious, but our user names follow a standard pattern, and anyone could easily figure out whose desk this was, guess the user name and gain access to our high-security systems with the token. Considering the risk, I decided to break one of our ground rules and confiscate the token.

So how did we do overall? Worse than I expected, but better than I feared. I can't help but keep an eye out for this sort of thing when I visit other companies, and I'm surprised at how many violations I see. And though I'd like to think that security vulnerabilities are more frequent elsewhere, I was shocked at the type and distribution of problems at our company. No group was unaffected. I clearly need to do more awareness work. I suppose it's time to start nagging again. ▶

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Vince Tuesday," whose name and employer have been disguised for obvious reasons. Contact him at vince.tuesday@hushmail.com, or join the discussion in our forum: QuickLink a1590

To find a complete archive of our Security Manager's Journals, go online to computerworld.com/secjournal

SECURITY LOG

Security Bookshelf

Computer Security: Art and Science, by Matt Bishop; Addison Wesley Professional, 2002.

Bishop is a well-known security expert. His *Computer Security* is a good textbook for university courses but has more limited value for business security professionals. The prose has that dry, textbook feel, with ideas presented as theorems, and much mathematical notation.

On the other hand, if you want a grounding in the underpinning theory of IT security, *Computer Security* can provide that.

- Vince Tuesday



Matt Bishop

Apple Fixes OS X Security Glitch

Apple Computer Inc. has released a new security update that addresses a potential problem that arises when the Apple Filing Protocol, or AFP, is used to reshare a Network File System mount. The update also addresses a potential situation that causes LDAP bind authentication requests to be improperly sent when using Kerberos authentication. The 1.4MB file is available for download through OS X's Software Update System Preferences pane.

Unisys Suite Spots Financial Fraud

A new family of products and services from Unisys Corp. lets financial institutions detect early on more complex kinds of fraud, as well as identity theft and money-laundering schemes. The Unisys Active Risk Monitoring System suite improves the ability of banks and other organizations to spot patterns of seemingly unrelated events that add up to criminal activity, according to the company.

BRIEFS

RadVision Releases V1.5 of SIP Tool Kit

RadVision Ltd. in Glen Rock, N.J., this week announced Version 1.5 of its SIP Server Developer Toolkit, which contains two new optional modules, Presence and Back-to-Back User Agent (B2BUA). B2BUA takes a traditional Session Initiation Protocol (SIP) end-to-end call and mediates it through a central SIP server, enabling a corporation or service provider to manage and track a call from beginning to end. It also offers new features such as billing, usage and accounting, RadVision said. Presence now includes voice and videoconferencing in addition to instant messaging. Version 1.5 is now shipping. Pricing wasn't disclosed.

Sanctum Rolls Out Testing Product

Sanctum Inc. last week introduced an automated testing tool for detecting and fixing defects within any Java or .Net application development environment. Sanctum's AppScan DE 1.7 is integrated into Microsoft Corp.'s Visual Studio .Net 2003 environment and is available as a plug-in for several integrated development environments. The product retails at \$1,495, though Santa Clara, Calif.-based Sanctum is offering it for \$995 through Aug. 1.

Lab Picks Software For Supercomputer

The Los Alamos National Laboratory has chosen Platform Computing Inc.'s Platform Load Sharing Facility (LSF) software to help harness the total computing power in the lab's new ASCI-Q supercomputer. The supercomputer is built from 2,048 Hewlett-Packard Co. AlphaServer ES45 servers and uses Toronto-based Platform's LSF workload management software to distribute the total computing power across the machine. ASCI-Q will be used to conduct predictive nuclear weapon simulations.

NICHOLAS PETRELEY

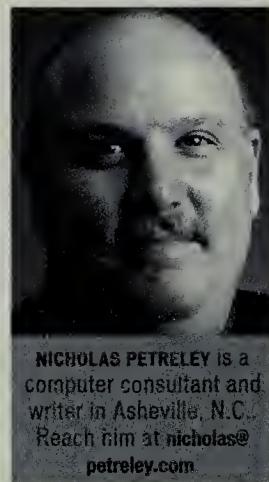
Inside Story From The SCO Mailbag

SOMETIMES THE STORY behind a high-profile news story can be pieced together from the correspondence of the major players. I thought I'd take a peek into SCO's mailbag to see who's writing CEO Darl McBride, VP Chris Sontag and attorney David Boies and find out what they're saying about SCO's claims that it owns the legal rights to Unix and maybe even Linux.

Dear Mr. Boies, Mr. McBride and Mr. Sontag: This letter is to let you know that I have signed and returned the NDA. While I appreciate your offer to pay for my travel expenses, there's really no need for me to fly out to your location to view anything. I just "know" there are definitely hundreds, if not thousands, of instances where Linux programmers illegally incorporated SCO intellectual property in their code. I will be glad to report this information at your request. Let me know if and when you need any more expert testimony.

Sincerely,
Jayson Blair, formerly of
The New York Times

Dear Mr. Boies, Mr. McBride and Mr. Sontag: Thank you for your communication with our blessed monastery. We confess that we were entirely baffled by your allegations until we realized that you were using the words *Unix* and *eunuchs* interchangeably. We sense that you may be confused on a few other important issues, as well. While it is not unheard of for monks to be *eunuchs*, not all of us are. And even if we were, we would not be infringing on your copyrights for *Unix*. We have attached a list of historic and religious resources you may wish to



NICHOLAS PETRELEY is a computer consultant and writer in Asheville, N.C. Reach him at nicholas@petreley.com

investigate to educate yourselves on these matters. Regardless, our particular monastic order requires a vow of poverty, therefore we respectfully decline your offer to sell us SCO in order to avoid litigation, since we have no disposable funds.

Sincerely,
Brother Sebastian

and Mr. Sontag: We are concerned about our current investment in Unix licenses. It has come to our attention that SCO does not actually own the copyrights and patents for Unix. Since we paid considerably more money than the normal fees, we are concerned that our investment may be affected by your misrepresentation of your alleged leverage over the use of said copyrights and patents. Obviously, it is better for all concerned to be discreet on this matter, so we have elected not to pursue legal means of recovering our investment. Instead, we would like to invite all of the management at SCO to a vacation retreat in Hawaii in order to discuss this matter further.

We have arranged all the transportation and will send a black limousine to your headquarters to pick you up on Thursday at 9 a.m. Please have all your corporate officers waiting outside on

the sidewalk for this ride, preferably lined up side by side so that we can get a clear view of everyone at once when the limousine arrives.

Sincerely, Bill Gates

Dear Mr. Boies, Mr. McBride and Mr. Sontag: This is to notify you that we cannot comply with your request to forward your letter to its intended recipient because said recipient is fictional. I did take the liberty of discussing the issues you raised with our corporate lawyers, however. They advise me that it is extremely unlikely that a judge will agree with your charge that the name "Scooby Doo" infringes on the SCO trademark and has damaged your business as a result. While you are correct that the two names share three consecutive letters, we are confident that customers are able to distinguish between an operating system and a cartoon dog with a speech impediment.

It is quite true that Velma is the kind of character that would work with an advanced operating system, and that might mean something if the characters were real. Regardless, we are not in a position to dispute what your experts under NDA saw in your "source code" since we are unfamiliar with the term *source code*. But we are quite certain that our fictional characters Velma and Shaggy did not misappropriate the words *jinkies* or *zoinks* from anything owned or created by SCO. Finally, the theory that we chose the name "Mystery Machine" to hide the secret use of your intellectual property would be fascinating if our Mystery Machine were a computer instead of a cartoon flower-power van.

Sincerely,
Betty Cohen, president,
Cartoon Network

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MANAGEMENT

QUOTE OF THE WEEK

Achievement is a blend of intelligence, motivation and personality, and that blend makes the difference between A and B players rather than talent per se.

- Vineeta Vijayaraghavan, consultant, Katzenbach Partners LLC

Dashboard Democracy

Desktop business-intelligence displays used to provide financial data to executives. Now they're finding a new home in the cubicle — where real work gets done — says Deb Masdea (right), director of business knowledge services at The Scotts Co. **Page 40**



OPINION

A Reality Check On Going Offshore

Columnist Bart Perkins provides a checklist of issues to consider — from U.S. privacy and security laws to the employee backlash — before taking the offshore IT plunge. **Page 42**

“The Visa and MasterCard programs won't solve all the problems. They are just one tool in the arsenal.”

MICK LESTER, DIRECTOR OF WEB SERVICES AT K-B KIDS

**KNOWLEDGE CENTER
E-BUSINESS**

NOBODY LIKES BEING RIPPED OFF. But for online retailers, the pain of being ripped off by unethical consumers, identity thieves and bogus-card gangs has been magnified by what they consider to be the not-my-problem attitude of credit card issuers and card associations like Visa and MasterCard.

Tom Mahoney, a network administrator at Franklin & Marshall College in Lancaster, Pa., recalls vividly the shock he and his wife felt shortly after they launched their own mom-and-pop e-business in 1997 and discovered not only the threat of fraud but also the double whammy from the credit card companies.

“We thought from the beginning something was fishy — getting orders for herbs and personal care products with U.S. credit cards, all . . . for shipping to Yugoslavia,” says Mahoney. He recalls that his card processor had assured him that if he had an authorization number for the transaction, then “all was well.” But then the chargebacks started coming in, and banks refused to honor the transactions and added penalty fees for Mahoney’s business.

Mahoney says he called some of the banks and was shocked to discover that many of the credit card numbers in question had never even been issued to cardholders, yet they were granted authorization numbers. “That’s when I learned that something was wrong with the system,” he says.

Today, credit card fraud is pegged as a \$160 million annual problem for just the top 25 online retailers, according to Gartner Inc. in Stamford, Conn. But there are some glimmers of hope for improvement.

One encouraging sign is that Visa International Inc. and MasterCard International Inc. recently started full-scale marketing of credit card systems that require online purchasers to supply additional passwords or security codes (Verify by Visa and MasterCard’s similar SecureCode). It’s an attempt to provide an online equivalent of the in-store signature. Even more important, from the retailers’ perspective, merchants that join the programs will finally be freed from most of the liability and onerous charge-

Web retailers are teaming up to fight online credit card fraud and take back the e-neighborhood.

By Alan R. Earls

Fraud-Busters

RAY NG

Possible Signs of Fraud

- **Country of origin.** Orders from Romania, Macedonia, Belarus, Pakistan, Russia, Lithuania, Egypt, Nigeria, Colombia, Malaysia and Indonesia have a very high incidence of fraud and often have unverifiable addresses.
- **Untraceable e-mail address.** In many fraudulent orders, the customer's e-mail address is provided by a free e-mail service, which is relatively untraceable.
- **Express shipping.** Most fraudulent orders specify overnight or one-day shipping.
- **Shipping address differs from billing address.** If you are selling valuable items, it's a good policy to ship only to the billing address of the credit card holder.
- **Suspicious billing address.** If the billing address is something generic like 123 Main St., the order could be fraudulent. Use Internet mapping tools to see if the address can be verified.
- **Request to leave at door.** Someone placing a very valuable order who specifies that the package is to be left at the door could be using an unwitting person's house as a drop-off point. You should require a signature upon delivery.

SOURCE: YAHOO INC.'S "SMART SELLING" WEB PAGE

Merchant Fraud Squad

This secretive group of merchants, which has hundreds of members, shares tips and tricks for combating online fraud. It recently changed its name to the Merchant Risk Council.

Founding members:

- American Express Co.
- Barnesandnoble.com Inc.
- ClearCommerce Corp.
- Expedia Inc.
- First Data Corp.
- Starwood Hotels & Resorts Worldwide Inc.
- Qsent Inc.

SOURCE: MERCHANT FRAUD SQUAD WEB SITE

How One Merchant Battles Fraud

Even small and midsize online merchants that lack the clout of big businesses can do plenty to defend themselves from credit card fraud. A case in point is Computerized Horizons, a small software company in Worcester, Mass. R. Scott Perry, the company's technology specialist, says that some bad experiences with card fraud a few years ago — compounded by chargebacks and chronic inaction on fraud from card companies — compelled his organization to act.

"Since we deal primarily with businesses, all of whom have their own domain name, one of our main tools to help

detect fraud is to see if the billing address for the credit card matches the address that is listed in the Whois record for their domain or is nearby," says Perry. (Whois is a domain directory at www.networksolutions.com.) Like many other methods, this is inexact and subjective. Mismatches just raise questions about the buyer's legitimacy and, taken with other indicators, could lead Computerized Horizons to turn down the sale.

Another tool calculates the distance between the area covered by a ZIP code and the area usually associated with the customer's telephone numbers. Again, mismatches raise questions about the legitimacy of the order. Even the IP address from which an order is placed can help hint at fraud. "At the very least, this will show the country that the person placing the order is located in," says Perry.

But merchants, analysts and even Foster City, Calif.-based Visa and Purchase, N.Y.-based MasterCard acknowledge that no one is out of the woods yet and that the new programs don't cover every situation. It may be a few more years before the two companies' programs reach critical mass and begin to show significant results. Plus, there's some concern that the pop-up window that requires the new codes will drive some legitimate customers away.

"The Visa and MasterCard programs won't solve all the problems. They are just one tool in the arsenal," says Mick Lester, director of Web services at K-B Kids, a Denver-based unit of KB Holdings LLC. Still, he says, "with the liability shift to the card issuer, I definitely think merchants should jump aboard."

For now, Lester says that even with Verify by Visa and SecureCode, K-B Kids won't abandon its homegrown fraud-busting methods, such as verifying and comparing card and shipping addresses, as well as flagging and scrutinizing transactions involving expensive items.

K-B Kids also uses a scoring system to look for fraud, says Lester.

The system weighs every aspect of a transaction for its risk potential. K-B Kids even maintains its own "negative database" — a file of card numbers that have generated problems in the past, including those used by consumers who claim that they haven't received their shipments and refuse to pay.

Although K-B Kids and other large retailers (notably Amazon.com Inc.) have invested heavily in proprietary fraud-prevention methods, many smaller organizations haven't been able to afford those investments, and as a result, they've been flocking to third-party services and consortia.

For his part, Mahoney launched an organization called Merchant 911, which provides its members with a confidential forum to share fraud-prevention methods and air gripes about banks and credit card companies. Mahoney also makes available a selection of databases and antifraud tools.

Meanwhile, on the West Coast, IT veteran Dan Clements has set up an organization called CardCops.com that provides a forum for merchants and

consumers to share information about what he calls "compromised" credit cards. Shoppers who think their card may have been stolen or misused can e-mail him at NeighborNetWatch@CardCops.com.

But Clements, CEO of the Malibu, Calif.-based organization, says some of his best information comes from "the underground" — IT professionals at merchant companies who are privy to information about cards that may have been hacked by thieves, a problem that merchants are often reluctant to report.

Clements says his staff of 12 also hunts out bogus or suspect cards by doing targeted Google searches and visiting chat rooms where, he says, cards are often first tested by crooks.

But perhaps the most significant fraud-fighting effort is the Merchant Risk Council, which until recently was known as the Merchant Fraud Squad. "We are organized much like a neighborhood watch," says Cathy Black, a board member of the nonprofit group and the director of fraud prevention at American Express Co. in New York.

The Merchant Risk Council has scores of members, including many large corporations. It's secretive about its work and methods because, as Black explains, whenever a story comes out about a fraud-fighting strategy, the "bad guys" learn how to change their methods. However, she says the focus is on sharing emerging trends and information in a secure environment.

For example, at the group's annual conference in March — which was closed to the press — there were presentations on "global trends in cybercrime," "predictive models for fraud" and "emerging fraud schemes," according to the group's Web site.

The group is also powerful enough to lobby vendors to change their practices. For instance, Black says the Merchant Risk Council persuaded some delivery companies to watch for suspicious activity such as unusual shipping patterns.

But, as Black notes weary, fraud isn't going away, no matter what merchants and card companies do. "There is no magic bullet — all the fraud solutions have a shelf life — we will always have to continue to migrate toward new solutions," she says. ▀

Earls is a freelance writer in Franklin, Mass.

For foreign orders, Perry uses the Merchant 911 Web site, which has a database of credit card issuers that identifies the country in which a card was issued. This can be cross-referenced with the country that the IP address is registered to and the one in the billing address. Orders that originate from or include a "free" e-mail address also raise a red flag.

Perry says the best fraud-detection tool is often just comparing new orders against prior orders to look for patterns that aren't typical, such as the time of day when the order was placed. Perry says his job would be easier if all credit card companies maintained a database of stolen cards, but he's doubtful that will happen anytime soon. So, like other merchants, he will continue to improvise and develop workarounds to keep card fraud from putting him out of business.

- Alan R. Earls

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Nurture the B Team

IT stars get all the glory, but your supporting actors get the job done.

It's always about the stars, the A players on the fast track to bonuses, promotions and glory. IT leaders will do nearly anything to get them — and keep them. But what about the rest of us? In this month's Harvard Business Review, Vineeta Vijayaraghavan and Thomas J. DeLong posit that a company's long-term performance and even survival really depend much more on the B players, those steady, capable performers outside the spotlight. Vijayaraghavan, a consultant at Katzenbach Partners LLC, an organizational strategy firm in New York, talked with Kathleen Melymuka about the vital contributions of these "best supporting actors" and how to make sure you're not taking them for granted.



Q&A

Who are the B players?

Those that, in a rough ranking, are neither fast-track — in the top 10% — nor struggling in the bottom 10%. Intuitively, most managers can tell you who they are.

You say being a B is more about temperament than talent. Explain? Oliver Wendell Holmes said that F.D.R. had a second-class mind and a first-class temperament. Achievement is a blend of intelligence, motivation and personality, and that blend makes the difference between A and B players rather than talent per se.

Tell me about the B players who are "recovered A" players. At Microsoft, one of the top 20 performers was an A player who burned out and went rock climbing. He later came back, but to a smaller group — a think tank for new-product development. We call him a "recovered A" because he comes from that world. He maintained calling cards from that world. He knows how it works, and he can move in and out of that world.

Other B players are "truth tellers." Can you give me an example? These are people who have a zeal for the truth. They're not necessarily "company types," which A players tend to be. They're willing to tell the truth even at a cost to their standing in the company. One was a manager in charge of building a technology infrastructure for his trad-

ing division. He discovered that someone with status had paid more than the going price for a system. No one had dared raise a question, but he wasn't cowed and spoke up and saved the company millions of dollars.

Some B players are "go-to" people. What does that mean? Those aren't functional experts, but they have an extraordinary feel for the processes and norms of the company. They can make connections and go across departments and divi-

they think there's not enough ROI in it.

What else do B players do for the company?

A players tend to say, "I'm the brand." If a better opportunity comes up, they'll jump ship. B players aren't martyrs, but they tend to be willing to take on long-term projects and stay for the whole thing. They are really good at building trust with clients through these long-term projects. This trust creates a platform for innovations that the A players might dream up but couldn't otherwise have gotten clients to sign on for. They also tend to remind leaders to grow slowly. A players want to add head count and say they ran a big department. B players are more likely to say, "If we grow that fast, these are my concerns about quality. And if the growth cycle gets cut short, how will we handle that?"

How do B players help a company in transition? They're less affected by shake-ups because they're less likely to be tapped for promotions or be fired.

They provide continuity and pass on knowledge. They provide ballast in bad economic times because they stick around. They're not just there for big bonuses. B players in an IT department are critical for mentoring new people and assimilating them into the corporate structure. They provide cultural support and informal management while management is in transition.

Managing B Players

Advice from
Vineeta Vijayaraghavan:

Pick the right manager.

"Leaders tend to be A players, so they're not always the best managers for B players."

They have to learn to accept differences and manage B players differently. If they're not the best mentors in the organization for the B players, find others."

Give them your time.

"A and C players tend to be the squeaky axles. B players just get the job done. Make sure you talk to all your direct reports, including those who don't initiate contact."

Nurture their careers.

"Recognize their contributions, and give them choices."

Have conversations with them about career paths. Consider what you can do to keep good performers who don't want to go through the traditional route."

sions to get things done. They're familiar with who really has the power, even if it's not the person in the formal role.

Aren't there B players who are really just plain mediocre performers? Yes, definitely. Those we categorized as middling. But that's often an alignment issue — an issue of where and how to use their skills. Managers tend to not have as many conversations with B players about how to use their skills because

These B players sound like a lot of IT people I know. I think IT is full of these. IT people are often stars and also often classic B's. IT people see things differently. One technology company told us how their B players showed management that it wasn't worth it to work long hours because long hours brought higher error rates and less creativity in product development.

Don't B players get tired of holding things together with so little credit? Yes, absolutely. They will only stay for so long if not recognized. Managing them takes more time than managers give them, but still a tenth of the time it takes to manage stars. We're urging managers to spend that time. It's a small investment compared to time they spend with A players. ▀

Melymuka is a Computerworld contributing writer. Contact her at kmelymuka@yahoo.com.

This is the latest in a series of monthly discussions with **Harvard Business Review** authors on topics of interest to IT managers.



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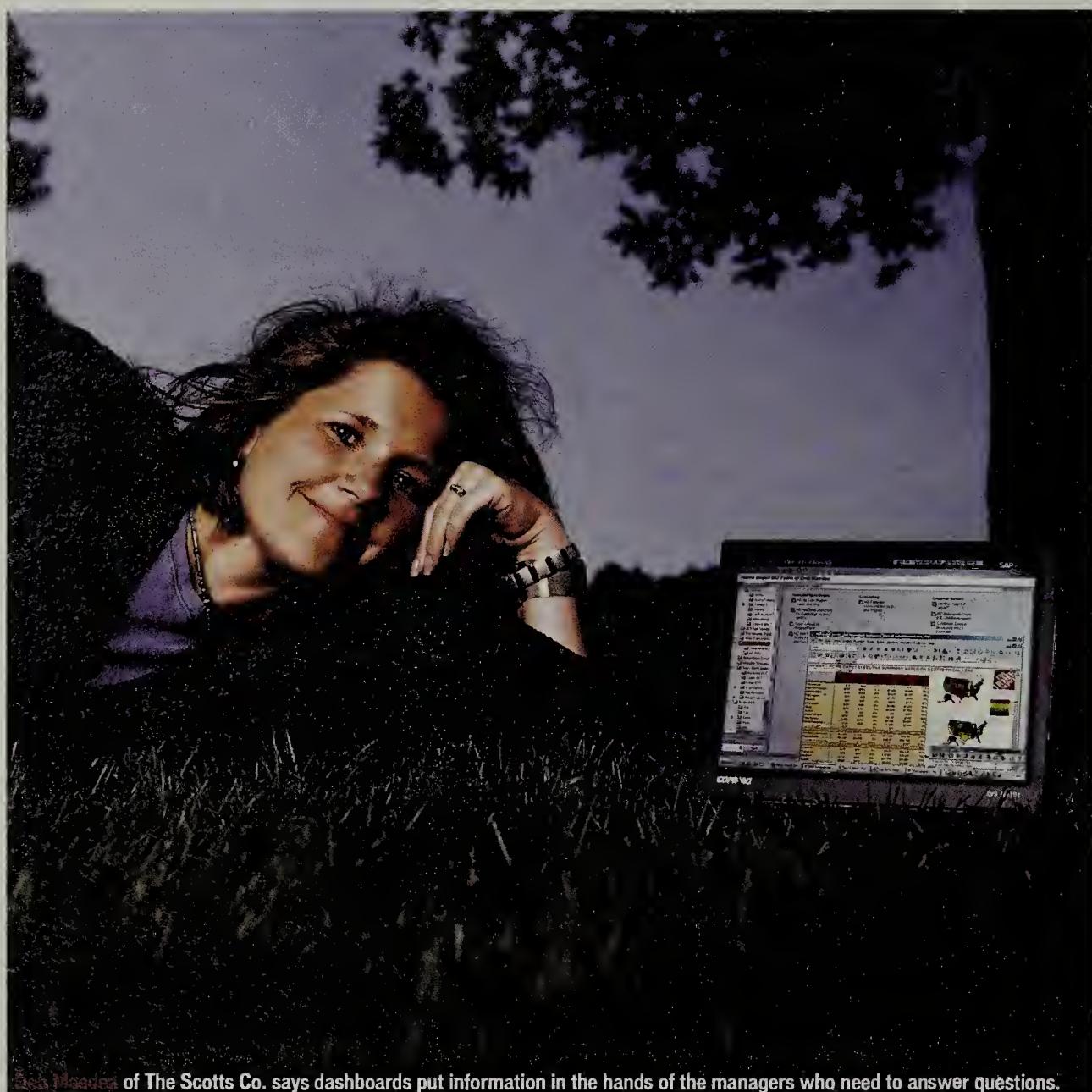
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of The Scotts Co. says dashboards put information in the hands of the managers who need to answer questions.

THE EXECUTIVE INFORMATION SYSTEMS (EIS) of the 1980s stayed in the executive suite and provided fancy pie charts of financial data. But now these business-intelligence tools have found a new home in the cubicles.

They've also found some new names: "dashboards and scorecards," says John Hagerty, an analyst at AMR Research Inc. in Boston. "We are now seeing them all over the enterprise, and for a variety of reasons." Hagerty says more than half of the 135 companies he recently surveyed are implementing dashboards, which are also spreading into various nonfinancial departments (see chart, next page).

Dashboards aren't just for financial data anymore. "At Southwest Airlines, they call them 'cockpits,' and they're specialized so that the guy in charge of putting peanuts on airplanes gets a different view than the guy who's in charge of purchasing jet fuel," says John Kopcke, chief technology officer at software vendor Hyperion Solutions Corp.

The Bottom Line

The payoff is that delivering dashboard data to front-line workers puts business intelligence in the hands of people who can exploit it to make money-saving decisions on a daily basis.

Motorola Inc., for example, deployed business-intelligence software from Informatica Corp. in Redwood City, Calif., last year to about 200 desktops in various purchasing offices. Falgun Patel, senior manager for sourcing systems at Schaumburg, Ill.-based Motorola, says his dashboard gives him unprecedented access to purchasing information.

"We got the system up and running in mid-2002," says Patel. "Prior to that, we had to pull information from a variety of spreadsheets and custom databases from locations all over the globe." In fact, this is still the case, but now Informatica's software does the pulling, and sourcing officers like Patel can get instant access to sophisticated metrics.

"It used to take 20 days for one of our indirect purchasing officers to collect global stats," says Chet

DASHBOARD DEMOCRACY

Desktop business-intelligence displays are moving from the executive suite to the cubicles, where the ROI is even better. By Mark Leon

Phillips, IT director for business intelligence at Motorola. "Now it takes minutes."

Patel says the result is smarter, faster decisions. "On my dashboard, I can immediately see our global spend with a particular supplier," he explains. "I can slice the data in a number of ways — various charts, historical records, purchases by departments, etc. This gives me exactly what I need to negotiate a better deal with the supplier."

He says the dashboard also allows him to be more proactive. "By combining the purchasing analytics on my desktop with current market conditions, I can determine whether it is better to negotiate for a commodity or go ahead and lock in a supply," Patel says.

The result is a fabulous return on investment. "We estimate that this system saved us about \$15 million a month in 2002," says Phillips.

Reality Wins

One reason for the democratization of business intelligence is that reality finally caught up with perception. "So often it is the high-level executive who is seduced by the 'Wow! Cool!' appeal of an EIS," says Deb Masdea, director of business knowledge services at The Scotts Co., a producer of lawn and garden products in Marysville, Ohio.

But, Masdea says, it is midlevel managers and analysts who need the data. "In reality, an executive is probably going to want hard copy, and if there is a question, he or she will pick up the phone. The midlevel managers are the ones who have to answer these questions," she says.

With this in mind, Scotts decided to push data analytics to the masses back in 1998. The project coincided with the company's adoption of a corporatewide SAP ERP system; the business-intelligence software is also from SAP AG.

Prior to this, a distribution manager would have to pick up the phone to get the latest statistics from manufacturing and distribution facilities. "Now that manager can open a report to get a daily snapshot of activity," says Masdea. "We can even pull in POS [point-of-sale] and inventory data from our big retail customers. If inventory at an outlet looks too low, the manager can call a sales rep or the buyer directly."

This is critical in the lawn and garden business, she says. "It is a very seasonal industry, which means it is

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NOT GOOD for Control Freaks

Business-intelligence software may be ready for the people, but the people aren't always ready for it.

The problem is that dashboard democracy often requires middle managers — for whom information is power — to give up some control.

"Historically, our midlevel managers had total control over the green-bar reports that showed up on their desks," says Deb Masdea, director of business knowledge services at The Scotts Co.

But when new dashboards started popping up on desktops throughout the company, that data monopoly vanished. "Suddenly, that manager's boss, and some of his employees, had instant access to all those reports," she says.

It was a tough sell, and it took time to get those managers to release their grip on the information, but Masdea says two things made the transition successful. "We had to show these managers that by giving up control, they also reduced their workload because they no longer had total responsibility for managing all that data," she says.

The other strategy was to sell the system from the business rather than technical side of the house. "We had analysts — superusers from the manager's own business units — do the training," says Masdea. "These were not techie types, so they could talk to the managers in their own language and clearly show them the business benefits of the system."

At real estate firm CB Richard Ellis, senior project manager Sue Willess used similar approaches to make sure a new PeopleSoft scorecard system didn't fall by the wayside. Plus, she shrewdly started deployment with office managers who she knew would be most resistant to change. "Our experience is that it is easy for people to criticize the thing they know the least about," says Willess. "But these potential detractors will also be your biggest supporters if you can get them on board early."

— Mark Leon

easy to miss an opportunity," Masdea says. "These dashboards empower our managers to be proactive."

The Daily Snapshot

One place where dashboards are making inroads is in sales departments. At Honeywell Inc.'s Specialty Materials Division in Morristown, N.J., dashboards give everyone in sales a clear view into business performance — every day.

In September, the division finished installing 100 dashboards from Cognos Corp. throughout the sales department. "We wanted everyone to see the same information at the same time," says Jane Booth, director of data and knowledge management at the division.

Access is truly democratic. "Sales reps can see

their own sales stats, but they can also see how the other salespeople are doing," she says. "And managers have access, too."

Booth says she likes the results. "We moved quickly from a monthly or quarterly view to a daily snapshot of what is going on. A big benefit for us is that now we have a common definition and view of all this information."

In a Glass House

Dashboards can have a big effect on communications — and company politics — in the organization.

Booz Allen Hamilton Inc. in McLean, Va., is rolling out Hyperion's performance scorecard to its 1,200-person global operations team. Sophisticated analytics will allow the human resources department, for example, to "call up stats on turnover ... correlate these with training and possibly deduce that more departmental training is needed," says John Monczewski, manager of the consulting firm's balanced scorecard project.

And in the spirit of democratization, Monczewski says employees will be able to look at scorecards for all departments in the team. "I would say that 90% of the information is available to everyone," he says. "We want people to see as much as possible."

Why? "It is not enough to optimize your own performance," Monczewski says. "You need to see if this comes at the expense of someone else on the team. We don't want people to get locked into the notion that this is just a dashboard on personal metrics."

At CB Richard Ellis, a giant commercial real estate company in Los Angeles, desktop scorecards from PeopleSoft Inc. are used by 64 U.S. office managers to determine which brokers deserve to get perks or additional resources, based on the revenue they bring in.

Previously, that process lacked precision, says Sue Willess, senior project manager. "Now the office manager can quickly see revenues, expenses and salaries for each brokerage team," says Willess, and then determine whether a broker's request for, say, an additional office assistant is really justified.

In addition, managers can see the numbers for every other office. This kind of wide-open scorecard probably wouldn't work in some environments, but it's perfect for sales, where everyone thrives on competition, Willess says, adding, "Our office managers like to say now that 'you can run, but you can't hide.'"

There is a potential downside to this plethora of information: AMR's Hagerty calls it "metric madness."

"Dashboards and scorecards are about measuring," says Hagerty. "If measures are too broad and diverse, then dashboards can be a distraction." So, not surprisingly, the democratization of business intelligence comes with responsibility. "It requires management discipline," Hagerty says, "so you can focus on only those measures that really matter to the users."

Leon is a freelance writer in San Francisco.

OUTSIDE LOOKING IN

Dashboards aren't just for employees inside the company. A Web-based dashboard can also be a tool for providing valuable data to customers in the supply chain:

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BRIEFS

Documentum Issued Records Patent

Documentum Inc. has been issued a U.S. patent for its records management technology, which automates and streamlines the classification of electronic records. The technology is a key component of the Pleasanton, Calif.-based company's Records Management Edition and Records Services for Email. The system handles many requirements of the Securities and Exchange Commission's Rules 17a-3 and 17a-4, the Health Insurance Portability and Accountability Act and the Sarbanes-Oxley Act.

Mpower Hires Exec



Russell A. Shipley started last week as the new-technology officer at Mpower Communications Corp. in Pittsfield, N.Y., a provider of broadband Internet access and telephone services to business customers. He will work on improving Mpower's integrated data and voice product and the company's facilities-based network. Shipley held senior positions at Global Crossing Ltd. and Frontier Communications Corp., where he led the planning, engineering and construction of the nationwide fiber-optic network shared by Frontier and Qwest Communications International Inc.

SHIPLEY

Russell A. Shipley started last week as the new-technology officer at Mpower Communications Corp. in Pittsfield, N.Y., a provider of broadband Internet access and telephone services to business customers. He will work on improving Mpower's integrated data and voice product and the company's facilities-based network. Shipley held senior positions at Global Crossing Ltd. and Frontier Communications Corp., where he led the planning, engineering and construction of the nationwide fiber-optic network shared by Frontier and Qwest Communications International Inc.

BPO Market Will Grow, Gartner Says

The global business-process outsourcing (BPO) market is expected to grow 10.5% to \$122 billion in 2003, up from \$110 billion in 2002, according to Gartner Inc. Large companies will expand outsourcing to entire lines of online products and services, such as payroll and transaction processing. North America is predicted to represent 57% of the total BPO market, or \$69 billion. Growth is estimated at 10.9%, or \$27 billion, in Western Europe and at 7.8%, or \$8.7 billion, in the Asia-Pacific region.

BART PERKINS

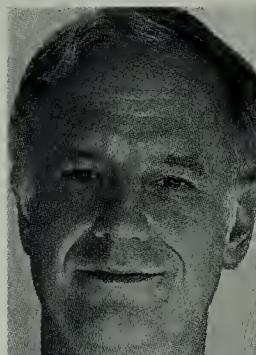
A Reality Check on Going Offshore

YOU'VE HEARD THE HYPE about how going offshore can save you big bucks on IT expenses. Your CFO thinks it's a great idea. You've completed a baseline of your IT portfolio. Now you're ready to develop your sourcing strategy and determine which work to outsource and whether you want any of it done offshore. In addition to the concerns that go along with outsourcing any function, some special considerations need to be addressed as part of the offshore decision:

■ **Intellectual property.** Determine to what degree any intellectual property you either take offshore or develop offshore will be protected in the courts. Some countries don't offer the same levels of legal protection found in the U.S. and Western Europe.

■ **Privacy and security.** Laws such as the Health Insurance Portability and Accountability Act and California's Cyber-Security Act [QuickLink 38357] mandate the way data must be handled and the actions that must be undertaken in the event that data is compromised. European Union law regulates where data must be physically stored and what data can be transmitted across country borders. Lower-cost countries follow U.S. and European law to differing degrees. Beware.

■ **Geopolitical risk.** War or terrorism could hurt the ability of your offshore provider to operate. While 9/11 proved that the U.S. isn't immune to terrorism, each part of the world has its own risks. The U.S. Department of State maintains a Web site (<http://travel.state.gov>) describing the potential risk of terrorist activities by country.



BART PERKINS is managing partner at Leverage Partners Inc. in Louisville, Ky., which helps CIOs manage their IT suppliers. He was CIO at Tricon Global Restaurants Inc. and Dole Food Co. Contact him at BartPerkins@LeveragePartners.com.

■ **IT infrastructure.** Lower-cost countries don't always have the same capabilities we take for granted in highly industrialized countries. When I was CIO at Dole Food, we had to remove several PCs from remote Philippine farms because the locals stole the telephone wires to sell the copper.

In Honduras, we had an uninterrupted power supply (UPS) to keep the computer running when one of that country's frequent blackouts hit. Unfortunately, we didn't have a UPS for the computer room's air

conditioner, so we kept it as cold as possible and gave the staff ski jackets. When the power went out, the staff spread plastic sheets over the computer to prevent the condensation from overhead pipes from dripping into the computer.

■ **Travel.** Geography may not be your friend. If it requires 18 hours in a plane (and an expensive ticket) to get to your offshore facility, you won't visit it very often. Moreover, travel inside a Third World country can be very time-consuming and difficult — roads and bridges may be poorly maintained

or targets of terrorist activities. Finally, travel in some countries requires many additional vaccinations.

■ **Communication.** Both the sales staff and the technical staff at the outsourcing vendor need to have excellent English skills. You don't want to have to use an interpreter whenever a problem arises. Moreover, if your provider is in a different time zone, find out if they'll work when you work (even if it's the middle of their night). If your workdays overlap for only a few hours, communication will be difficult. And your crisis will never occur during the overlap!

■ **Culture.** Cultural differences need to be understood and leveraged. It's easy to inadvertently insult offshore partners if you aren't careful. Greetings, forms of address, gestures, value systems and punctuality vary widely around the globe.

For example, Americans tend to glorify the hero and question authority. But, according to recent diversity studies, some Asians do what they're told even when they disagree with the approach. Study the local customs carefully before venturing abroad.

■ **Political backlash.** Many of your employees are unhappy with the number of jobs going offshore. Be prepared to address negative publicity and, in some cases, staff sabotage.

Going offshore presents unique challenges. Addressing them directly as part of your initial offshore decision will mitigate your risk and increase your chances of success. ▀

BEFORE YOU GO . . .

Read Bart Perkins' previous column on preparing for the offshore experience:

QuickLink 37545
www.computerworld.com

WANT OUR OPINION?

For more columns and links to our archives, go to www.computerworld.com/opinions

Are you being paid what you're worth?



Find out when Computerworld publishes the results from our 17th Annual Salary Survey of IT Professionals!



How much are other IT professionals with your experience and credentials earning? With help from you and your IT colleagues across the country, Computerworld will answer those questions with results from our 17th Annual Salary Survey.

Please take our survey now and enter a drawing to win a \$499 gift certificate from Amazon.com. Our survey period closes on Thursday, July 3 at 5:00 p.m.

Survey results and feature stories that offer practical career advice will be published in the October 27, 2003, issue of Computerworld. The issue will offer detailed information on average salaries and bonuses, by title, industry and region. You'll be able to compare your organization's compensation plans with those of other organizations and find the hottest areas of the country for IT pay.

To take the survey, and qualify for the drawing, go to:
computerworld.com/ss2003

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2003

LAN ADMINISTRATOR: Duties include: Applying advanced knowledge of computer systems, hardware and software, network protocols and end user requirements to maintain and manage large LAN system. Monitor and respond to complex technical control software problems utilizing a variety of software testing tools and techniques. Analyze and recover LAN systems and applications and fix/troubleshoot daily issues related to accessing information and/or application. Provide system solutions to internal units for accessing their information and task autoimmunization. Administer and configure Servers and their network resources to provide information access to internal users. Establish personal and shared network storage for data and application files, and maintain the network security and network printing. Study vendor products to determine those that best meet system needs. Train team members in network protocols. Daily work with: Windows NT and Novell networks; Bindview, LDAP, NDS, PC/LAN, TCP/IP, IPX and Zenworks. Min. Req's: BS/BA (foreign equivalent accepted) in CS, MIS or related field of study plus 2 yrs exp. in job offered or 2 yrs exp. in related occupation (i.e. Networking or Systems Analysis). MUST possess demonstrated expertise in the following: (1) Network Admin. and implementation in Windows NT and Novell multi-protocol environments for large networks (100+users); (2) Project Management experience using Bindview network management software; (3) Documentation of network procedures and training materials; and (4) Using: LDAP, NDS, PC/LAN, TCP/IP, IPX and Zenworks. Basic pay is \$44,000 per year FT and standard company benefits. EEO. Submit 2 resumes and respond to Case No. 2002-02287, Labor Exchange Office, 19 Staniford Street, 1st Floor, Boston, MA 02114.

IT PROFESSIONAL

www.maximaconsulting.com has immediate openings for Software Engineers and Analyst/Programmers for assignments in Boston/North East with the following skills:

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GIS DATA ADMINISTRATOR: Coordinate physical changes to computer data bases; and codes, tests, and implements physical data base, applying knowledge of data base management system; Design logical and physical data bases as well as maintain, manage and update land base layers including all editing, archiving and SDE maintenance by using the following computer languages and software: Java Script, Oracle 7.x/8.x, IBM unix environment, Internet Application Development, Visual Basic, C, C++ and GIS. Job is in Juno Beach. 40hrs/wk, 8:30am-5:00pm/ M-F, must have 2 yrs. Exp. in job offered or 2 yrs in related occupation (Software Analyst); Please send resume to SUI TECHNOLOGY, INC. at 3201 W. Griffin Rd. Ste#203, Dania, FL 33312.

Medical System Engineer: Drive international medical customer needs into detailed product design and implementation plans as well as provide system-level support during the development phase. Work with international customers, applications engineers and software engineers during the development stage to break down program requirements into a medical imaging system definition. Define project requirements with the engineering organization and program management in order to create an overall engineering plan, and validate this solution with customers. Work with hardware and software architects to analyze the use of new technologies and architectures to converge onto new systems solutions for the traditional and new market opportunities in medical imaging applications such as MRI, CT, Digital X-ray and Ultrasound. Requirements include a Master's degree or equivalent in Computer Science, an Engineering discipline or closely related field and two years of work experience in the job offered or related field of medical imaging system engineering. Applicants must have unrestricted authorization to work in the United States. Salary \$75,899/year. 40 hours/wk. Respond with two copies of resume to Case #200201917, Labor Exchange Office, 19 Staniford St., 1st Fl., Boston, MA 02114.

Principal Dbase Administrator: Utilize knowledge of a variety of corp. computing and dbase products & services to dev., implement, maintain and test numerous dbase systems utilized by co. Lead products & subprojects of significant tech. complexity. Coordinate app. rollouts, s/w upgrades, & data migration. Also measure capacity and conduct workload & performance analysis & analyze highly complex sys problems. Responsible for providing dbase admin support for Corp. and Commercial markets apps. Utilize high-level expertise in MS SQL Server & Sybase ASE & Replication Server, high-level competence in AIX and Windows 2000, dbase des., SOL access path analysis and tuning, dbase perf. tuning, and backup/recovery. Depict highly complex ideas, issues and designs to varied audiences & communicate project objectives, scope & direction across project teams. Identify analyze and resolve problems that occur within midrange distributed processing architectures and provide emergency off-shift support & occasional weekend implementations. Emergency off hours support and some weekends in addition to f-t sched. may be nec. at times.

Bach in CS, Eng, or related (or equiv) + 5 yrs exp utilizing AIX tools & utilities and shell scripting req'd. At least 3 of 5 yrs must incl exp w/ Sybase, and SQL Server. \$85,000/year full time.

Applicants should direct two (2) resumes to: Job Order # 2003-194 PO Box 989 Concord, NH 03302-0989.

Senior Systems Analyst (Chicago, IL) - Senior OO developer with experience in OO technologies to play a key role in the design, coding, implementation and support of pharmaceutical operations applications and initiatives. Will be responsible for the design, coding and implementation of complex modules in JAVA, JAVA script and HTML for a system requiring quick performance and throughput. Will utilize Websphere to tune and debug 3-tier architecture applications to optimize performance. Will lead team members in applying new technology. Must have a B.S. or equiv. in Comp. Sci., Management Info. Sys., Eng. or related field and 5 yrs of exp. in the job offered or 5 yrs of exp. in a position involving full life-cycle business software development. Exp. gained may have been obtained concurrently and must include: (i) 2 yrs exp. in OO JAVA analysis, design and development; (ii) 2 yrs exp. each in VisualAge JAVA, JAVA Script, SQL and UNIX; (iii) proficiency in Websphere and its relation to 3-tier architecture systems; (iv) 2 yrs exp. designing, coding, testing and implementing complicated modules as part of a high volume transaction systems to achieve maximum performance; and (v) 1 yr exp. leading team members in applying new technology. Must have proof of legal authority to work in the U.S. Submit resume to C. Hsien (REF:SSA), Caremark Inc., 1000 Lakeside, Bannockburn, IL 60015.

Software Developer
Duties: Responsibilities include the design, development, and support of several applications, including interfaces with the Marketing Systems Intranet, desktop applications, and the enhancement of existing systems. Additionally, the incumbent will utilize cutting edge technologies in enterprise-level development tools; work on platforms that include NT Server clustering technology; and develop client/server database applications and database driven web sites and applications.

Requirements: Bachelor's Degree in Computer Science, related discipline, or technical training and a minimum of three years related technical experience required. Experience developing complex Windows NT GUI database and Web applications using PowerBuilder, Visual Basic, MS Visual InterDev, DHTML, SOL Server, and UNIX also required. Incumbent must also have project management experience and a detailed understanding of application software and Systems Design Methodology w/ability to transfer this knowledge in the form of new technical directives and initiatives.

Please forward your resume and cover letter referencing Job Order #37277 for a Software Developer to:

Bureau of Labor Standards
45 State House Station
Augusta, Maine 04333-0045

Senior Consultant & Quality Assurance Specialist
170 Systems, Inc. provides advanced, Web-deployed solutions that enable e-businesses to capture and manage all of their information online, collaborate and optimize intra-company and B2B transactions. Through content management, document imaging and workflow products and services, we help companies and government agencies to integrate their information across their enterprise applications. We manage major implementations for Global 1000 companies in more than 40 countries.

170 Systems seeks top-notch, talented individuals to join the 170 Systems team. 170 Systems is a dynamic, fast-paced organization with a commitment to excellence in everything that we do. If you are looking for a challenging position as a **Senior Consultant**, a **Quality Assurance Specialist**, or a similar position in a growing leading-edge software company, then please visit the Careers section at www.170systems.com to apply. 170 Systems is an equal opportunity employer.

Web Developer for Miami to develop software for personal financial planning and life insurances especially for the Dutch market using online version, desktop with online technology using XML and XSL, MSMQ and BIZTALK. Full time position M-F pays market level salary. Applicants with 5 yrs related exp send resumes only to Human Resources, Sungard, 2000 S. Dixie Hwy, Miami, FL 33133.

System Administrator reqd for Imp/Exp & seller of foreign goods in NYC. Admin win/servers & app. software & monitor servers & LAN to analyze/resolve support related issues, maintain systems reporting for performance optimization & upgrades; maintain, dev. & update d/base on SQL Server 2000 envrmt; maintain & perform web server backup & recovery. Bach in Comp Sci & 1 yr exp in field or 1 yr exp as IT Mgr reqd. 40hr/wk, 9a-5p. Send 2 resumes to Hind Fashion, Inc., 1220 Broadway, #800, NY, NY 10001.

Software Engineer. 8a-5p. 40 hrs/wk. Dsgn, dvlpmnt & coord integration of software systems applying knowl of communications, network mgmt, parallel processing, comp systm architecture, comp graphics & systm software. Masters or equiv in Comp Sci, Info Sysms, Electrical, Electronics or related field of Engg reqd. In lieu of Masters, Bach in specified majors & 5 yrs of progressive work exp as comp prof w/above skills accepted. Resume to: Allied Informatics, Inc., 6525 The Corners Parkway, Ste 110, Norcross, GA 30092.

Database Administrator wanted by medical group in Monterey Park, CA. to design, implement and maintain database on network. 3 years experience required. Send resume to Andrew S.O. Sun, M.D., Inc. at 929 S. Atlantic Blvd, Monterey Park, CA 91754.

Software Engineers with extensive design, development, maintenance and support experience for complex software systems to work in our Anchorage, AK office. Advanced level computer skills a must. Send resume to SAIC, 1049 W. 5th Ave., Anchorage, AK 99501, Attn: H.R., Req#SWE, or on-line to ETSG.ALASKA@saic.com with Req#SWE in subject line. EOE.

Saras has openings for IT professionals. BS/MS is must. Skills in SAP, Baan, Peoplesoft, Oracle Apps, Sybase, AS/400, VB, PB, JAVA, JavaScript, PERL, Cat, HTML, XML, C, C++, OOPS, Web logic & Lotus Notes preferred. Also want Marketing Executive. resume@sarasamerica.com

Infogen is seeking IT professionals. Req. BS. Skills in following area are plus: Oracle9i, Weblogic / WebSphere, C++, Visual C++, VB, COM, STL, MTS, MSMQ, ASP, Java, HTML, XML, MTS, MSMQ, ADO, UML. Travel is required. Send resume to infojobs@infogeninc.com.

Seeking qualified applicants for the following positions in Memphis/Collierville, TN: **Senior Business Application Analyst**. Act as liaison between technical developers and users/customers. Requirements: Bachelor's degree* in computer science, math, statistics, business administration or related field plus 5 years of experience in analyzing business systems and developing technical automated solutions. Experience with Java, application server (either WebLogic, WebSphere or JRUN); and UNIX also required. *Master's degree in appropriate field will offset 2 years of general experience. Submit resumes to Sibi George, FedEx Corporate Services, 1900 Summit Tower Blvd., Suite 1400, Orlando, FL 32810. EOE M/F/D/V.

Gimme the Best LLC (Houston, TX) is seeking a Computer Programmer. 1 yr. exp. using MASM, SQL ReportWriter/Menu and Objective-C. Send resume to 6601 Stillwell, Houston, TX 77087 or jobs@gimmethebest.com. Attn: Jill

F.S. Construction is seeking an Industrial Engineering Programmer. 6 mon. exp. in SAP R/3 Enterprise, Primavera Project Planner V3.0, and MS Project. Mail resume to 19 Briar Hollow Ln, # 270, Houston, TX 77027. Attn: Mike Poona, or email: mponna@fsdesignbuild.com

Navision Developer: Develop/program customizations in Microsoft Navision Financial package; design & document user specified solutions; create system & end user utilization reports; manage data conversion (flat files, importation programs, etc.); provide Navision AVISTA customer support; teach development classes; program installation & setup of client/server software on Navision server & SOL server. Req. 4 yrs work exp in job offered or 4 yrs exp in related occupation as Developer or any suitable combo of edu., training, and/or work exp. Send resume to Compusystems of Georgia, Inc., 3100 Breckinridge Blvd., Ste 725, Duluth, GA 30096 Ref BN.

PROGRAMMER-ANALYSTS needed at client sites to analyze software suitability, define databases & applic patterns & write reqmts for system architecture, dvlpmnt & integrate project & maintain & support project using Persistence, Visibroker, Purify & Quantify (Rational), Rational Rose, C++, Rogue Wave Libraries, Oracle, VC++, COM, OLEDB for IP (Internet Publishing), IIS, IMAN & iMAN/DAV portals. Apply to: Hireme, Global Consultants, 25 Airport Rd, Morristown, NJ 07960.

Software Engineers needed by Alpharetta based IT Co - Bachelors degree with 1-2 years of experience in job. Exp in Skill sets incl: Java, JSP, Servlets, JDBC, XML, TIBCO, UML, Unix, NT, VB, ASP, C#, .Net, Business Objects, Crystal Reports, Oracle, SOL Server, Java, XML, C, C++, AS/400, COBOL, DB2, CICS, JCL, MVS, VSAM, Embedded/Firmware, Coldfusion, Perl, PHP, Network Administration, Rational Clearcase Administration, Netscape proxy server, Microsoft Exchange Server Administration, MOSeries, WEB Methods, Vitria, SAP, Peoplesoft, Lotus Domino Server Administration. **FREQUENT TRAVEL REQUIRED**. Send resumes to jobs0603@anisi.com. Ref: Ad#3308.

Programmer Analyst needed to research/design/develop computer software systems, applying principles and techniques of computer science, engineering, science, and mathematical analysis, using Cobol II, MVS, TSO/ISPF software. Must have Bachelor's Degree in Engineering, Science or Computer Science and two years of prior work experience in the job offered or as a Programmer. Must also have two years of experience using Cobol II, MVS and TSO/ISPF software. \$64,378.08 per year. 40 hrs/wk. 8am-5pm. Send resumes to MDCD/ESA, P.O. BOX 11170, Detroit, MI 48202-1170. Ref. No. 210054. 'Employer Paid Ad'.

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IA Foundation for Medical Care has multiple Programmer III job openings for which we need to hire expd prgmr. Candidates must have bach & at least 4 yrs exp in prgmg or equiv. Req skills incl: Java, C, C++, SQL, J2EE, Servlets, JSP, Java Beans, JDBC, XML, XSLT, multi-threaded Java application dvlpmnt, Oracle. Exp prgmg, implmntg & testing web-based applics on Unix & Win NT/Win2K. Some job openings also req Java 2 Platform Sun Certification, exp implmntg content mgmt systms to websites, &/or demonstrated proficiency with Eclipse, NetBeans Java, IBM VisualAge, IBM WebSphere, Junit, Swing, Apache, Jboss, Tomcat, Rational Rose. Send resume to Anne Dennis, 4725 121st St, Des Moines, IA 50323-2316.

IT co in Philadelphia, PA with multiple openings seeks Sftwre Enggs/Prog Analysts w/foll skill sets:
 1. C, C++, VB, Dev 2000, Oracle, SQL, Javascript & Crystal Rptrs. (Job Code NEA).
 2. Oracle, SQL, PL/SQL, Dev 2000, VB, VBScript, JavaScript, CGI & Rational Rose. (Job Code OJR).
 3. Oracle, Dev 2000, Desgnr 2000, Java, SQL* Loader, VB, Unix ShellScripts & HTML (Job Code UVS).
 Req Bach/Masters or equiv in Comp Sci, Engg, Tech, Sci or equiv & min 1-3 yrs exp. Send resume to Edge Technologies, Inc., 1822 Spring Garden Street, Philadelphia, PA 19130, fax: 973 331 9390.
 e-mail: nat@edgtek.com.

Seeking qualified applicants for the following positions in Memphis/Collierville, TN: Senior Programmer Analyst. Formulate/define functional requirements and documentation based on accepted user criteria. Requirements: Bachelor's degree* in computer science, MIS, engineering or related field plus 5 years of experience in systems/applications development. Experience with either Java, JSP, EJB or J2EE; and writing applications that interface with relational databases (either Oracle, Sybase, SQL Server or Teradata) also required. *Master's degree in appropriate field will offset 2 years of general experience. Submit resumes to Sibi George, FedEx Corporate Services, 1900 Summit Tower Blvd., Suite 1400, Orlando, FL 32810. EOE M/F/D/V.

Computers - Senior Software Professionals needed. Seeking qual. candidates possessing Bachelor's in CS, IS or equiv. and/or rel. work exp. Part of the req. rel. exp. must include 2 yrs. working with SQL Server, Visual Studio & Rational Rose. Two years exp. in public health service preferred. Must be willing to travel & relocate as req'd. Fwd. resume & ref. to Cal2Cal Corp., Attn: HR, 2182 DuPont Dr., #213, Irvine, CA 92612.

Programmer Analysts (multiple positions) sought by Edison, NJ-based s/ware consultancy firm. Must have Bach or equiv in Comp Sci & 3 yrs s/ware exp. Respond to: AK Systems, Inc, 100 Metroplex Drive, Suite 303, Edison, NJ 08817 or <http://www.aksystems-inc.com/joinnow.htm>.

Senior Software Engineer-Platform Services: Lead and participate in the specification, design, development and support of company product including the overall architecture, component interfaces and communication schemes, client and server-side programs written in Java and C++, Java and C++ based product APIs, and Oracle, SQL Server and LDAP database schemas. Assist with development of project plans and schedules. Follow rigorous software engineering standards including developing product requirements, functional and design specifications and adhering to coding standards. Create new tools and procedures to enhance the development process. Lead efforts to identify and resolve any product performance issues. Mentor junior engineers. Requirements include a Bachelor's degree or equivalent in Computer Science, an Engineering discipline or closely related field and four years of work experience in the job offered or related field of development of large-scale, high-performance systems and network management systems and protocols using Java and C++. Applicants must have unrestricted authorization to work in the United States. Salary \$92,833/year. 40 hours/wk. Respond with two copies of resume to Case #200201884, Labor Exchange Office, 19 Staniford St., 1st Fl., Boston, MA 02114.

Programmer/Analyst - Handheld Devices (Atlanta, GA) Interpret reqmts of Handheld Project Team & translate into dsgn documentation and/or coded solutions. Conduct testing of handheld systems. Maintain & enhance components of handheld, desktop, & AS400 systms. Provide tech assistance to team members & end users. Other duties as reqd. BS in Comp Sci or Engg (or foreign equiv.) & at least 3 yrs of handheld sysys prgmg & dvlpmnt exp. Applicant must have extensive exp (at least 1.5 yrs) working w/.NET Compact Framework, Windows CE, C++, & VB. \$60K. Submit resumes to: K. Bunkley, Rollins, Inc., 2170 Piedmont Rd, NE, Atlanta, GA 30324.

Computer Progr. for full life-cycle applic. dev. & maint. for CDC's STD Curriculum websites in Training/ Health comm. Develop user mgmt. system for website. Develop curriculum portal using ASP 3.0, MS SQL Server 2000, HTML 4.0, DHTML, Style Sheets (CSS), VBScript 5.0, and JavaScript 1.2. Develop US § 508 complaint web pages and support downloading of document in MS Word, MS PowerPoint, Acrobat pdf using Bobby Worldwide 5.0. Requires Bachelor's degree in Comp. Science or Equivalent + 2 yrs. exp. in job duties. In lieu of Bachelor's degree will accept candidates with 5 years of IT exp. Comp. salary. Apply: BCA, 2180 Satellite Blvd., #325, Duluth, GA 30097 with proof of permanent work authorization in the United States.

Programmer, Gainesville, FL - Design, engineer and test computer programs and systems for information technology company. BS in Computer Science. Salary commensurate with exp. 40 hrs/wk, 8 AM - 5 PM, M - F. Mail resume to: Info Tech, Inc., 5700 SW 34th Street, Suite 1235, Gainesville, FL 32608.

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Software Data Conversion Specialist

Data Conversion Specialist, 40-hr wk, 9AM-5PM. Associates or foreign degree equiv in computer science + 2 years in job offered or 2 yrs as Systems Analyst. Provide technical skills to ensure a successful, quick and accurate conversion of data from all systems; provide input to the detailed implementation project plan; provide a channel of communication with implementation and support to representatives; keep specifications current throughout the projects; work with client representatives to determine specifications for data mappings including analyzing source data, writing SQL queries; develop, test and implement automated data conversion routine including programs for extraction, transformation and loading of data to the new database using Visual Basic and SQL or FoxPro. Submit resume to: jobs@campusmgmt.com or Joe Bozza, HR Director, Campus Management Corp, 777 Yamato Rd, #400, Boca Raton, FL 33431.

Programmer Analyst, 40-hr wk, 8 - 4PM, Bachelor's or foreign degree equiv. in Computer Science or Computer Engg. or Electrical Engg. + 2 yrs exp. in job offered or 2 years as Systems Analyst. Analyze, review and rewrite programs; prepare records and reports; consult with staff and users to identify operating procedure problems; formulate and review plans regarding steps required to develop programs; devise flow charts and diagrams; modify programs. Resume to Dianna-Andrea Corp., 4210 NW 4 St., Miami, FL 33126.

DATABASE ADMINISTRATOR: DBA

DBA is responsible for administration and control of departments data resources, including RDMS, and for providing complete DBA support and administration for Production, Pre-Production and Development Servers. Duties include: utilizing data dictionary SW to ensure data integrity, security, and to eliminate data redundancy; provide technical design and data modeling; coding procedures and triggers; licensing issues; maintain SW tools and applications; conduct tuning; maintain an enterprise wide data repository; secure and maintain all current and future applications to ensure recoverability; provide end users with training and answers for technical issues; create documentation for database applications, and migrate databases to different storage and operating platforms. Daily work with: Sybase 11.5.1, HP UX 11, Solaris 2.7, Oracle, WinNT, SQL and UNIX scripts. Must be available 24x7 for beeper customer support calls. Min. Reqs: BS/BA (foreign equivalent accepted) in CS, MIS or related field of study plus 2 yrs exp. in job offered or 2 yrs exp. in related occupation (i.e. System Analyst or DBA Developer or related). MUST possess demonstrated expertise with: (1) Database support and administration for Production, Pre-Production and Development Servers; (2) Database development in Sybase 11.5.1, HP UX 11, Solaris 2.7, Oracle, and WinNT environments; and (3) programming in SQL and Unix Scripts. Basic pay is \$58,000 per year FT and standard company benefits. EEO. Submit 2 resumes and respond to Case No. 2002-02286, Labor Exchange Office, 19 Staniford Street, 1st Floor, Boston, MA 02114.

Manhattan Associates, Inc., a worldwide leader in supply chain execution systems is looking for IT professionals to join our team at our Atlanta, GA, Burlington, MA, and Mishawaka, IN locations.

Operations Research Analyst. Analyze complex mgmt info req. for transportation/logistics optimization-based decision support sys; incorporate math & computer models & other analytical approaches to deliver research based algorithmic/heuristic solutions for re-engineering into production-ready engines & incorp into existing software apps. Req: PhD in operational research, transportation or logistics & documented research in transportation or logistics optimization. **Implementation Consultants.** Consultants & specialists will coordinate client projects & interact with client org, evaluate client bus. ops & sys environments to implement client proprietary software sys, advise & design sys test plans, develop test & product environ at client sites, & develop proposals & supports for sales presentations. Req: BS in comp. sci, engg, or related tech. field (some req. MS). Substantial travel req. **Quality Assurance Analysts.** Assist in design & develop of software test procedures, plans & automated scripts using J++ and IBM Rational Robot to automate software testing. Prepare test recommends & doc. procedures for product design thru production. Evaluate test equip. used to perform quality checks. Document defects & assist with repairs. Maintain defect tracking system. Req: BS in comp. sci, engg, or related tech. field. Resumes to: J. Lurey, Manhattan Associates, 2300 Windy Ridge Pkwy, 7th Fl. N, Atlanta, GA 30339.

NETWORK PLANNING ANALYST LEAD: Duties include:

Responsible for network needs assessment and for architecture design and delivery of strategic high performance network solutions, including directory services integration, NOS architecture, high-speed switch networks, PKI/SSL, and least privilege best practice. Provide senior level technical leadership in solutions design and implementation across the organization, working with both implementation and production support teams. Will assess the impact on issues such as scalability, maintainability, reliability, extensibility and usability for planning and designing high-level network system architecture. Implement authorization, authentication and access control procedures. Daily work with: Siteminder, NOS design, Novell Netware, Windows NT and 2000 security procedures. Min. Reqs.: BS/BA (foreign equivalent accepted) in CS, MIS, or related field of study plus 2 yrs exp. in job offered or 2 yrs exp. in a related occupation (i.e. System or Network Support/Analysis) OR IN ALTERNATIVE 4 yrs exp. in job offered or related occupation in lieu of BA/BS plus 2 years exp. MUST possess demonstrated expertise in the following: (1) Network modeling, architecture, and NOS design; (2) Security procedures for Novell Netware, Windows NT Server, and Windows 2000; and (3) IP, Wan, Internet or internetworking. Basic pay is \$58,000 per year FT and standard company benefits. EEO. Submit 2 resumes and respond to Case No. 2002-02299, Labor Exchange Office, 19 Staniford Street, 1st Floor, Boston, MA 02114.

COMPUTER/IT

Sr. Project Mgr, Ntwrk Svcs. Hauppauge, NY. Assist US & South African dvlpmt teams to dvlp & implement Primer Services. Consult w/ US & S. African clts. & document proposed tech. sol'n (eqpmnt, svcs. & resources needed). Participate in RFP, RFO or sales cycle for clt. svcs. & high tech sls. in U.S. & Africa. Create a needs analysis (at times w/ Systems Eng's), sol'n design, create work & project plan stmnt. & participation, when req'd in pre-sales presentations. Coord. & manage in-house & on-site resources for projects. Train new Project Mgrs. & other members. Participate in resource allocation & planning mtgs. w/ mgmt. **REQUIRES:** Bach's degree (or equiv) in any field plus 1.5 yrs. exp. in job offd or as Project Mgr. Exp., which may have been obtained concurrently, must incld. 1.5 yrs. exp. design & implement Premier Services.

Sr. Consultant. Reston, VA. Determine, recommend, plan layout & install comp. hdwr & sftwr sys. & eqpmnt for max. efficiency. Dvlp info mgmt sys. & components. Dvlp & design graphical user interface & sftwr applics. using Visual Basic, Sheridan Data Widgets, Crystal Rptrs, MSMQ, ADO, .NET, OOP, SOL, XML & ASP. Write tech. descrit. of user needs, applics. & prog. f(x). **REQUIRES:** M.S. (or foreign equiv) in Comp Sci or Elect Engr plus 2 yrs exp in job offd or as Sftwr Engr. Exp., which may have been obtained concurrently, must incld. 2 yrs exp utilizing Visual Basic6, Crystal Reports7, ASP, ADO, & RDBMS.

Qualified applic., mail resume w/ad to D.Schofield, Dimension Data, Inc., 135 Newbury St, Framingham, MA 01701.

Cedar Rapids, IA - Computer Programmer - Convert project specifications and statements of problems and procedures to detailed logical flow charts for coding into computer language. Develop and write computer programs to store, locate, and retrieve specific documents, data and information. Work on software development projects for clients/customers. Projects involve development of new computer applications or systems, enhancement to existing computer applications/programs or conversion of older mainframe systems/programs to new Windows based systems/programs/applications. Must have Bachelor's in electronics engineering or computer science and 5 years experience as a computer professional. Must be a Microsoft Certified Product Specialist in Database Design and Implementation using SQL Server 7.0. Experience must include 2 years with Windows, Windows NT, RDBMS, C++, SOL and SOL server. Must have experience in developing systems with business and finance applications and experience in design, development and implementation of software from customer requirements. Position is 40 hours/week from 8 to 5, w/ salary \$70,000/year. Must have proof of legal authority to work in the U.S. Submit resume to Iowa Workforce Center, 800 7th St, SE, Cedar Rapids, Iowa 52406-0729. Refer to Job Order No. 1101761. Employer paid advertisement.

International Programming & Systems, Inc. has employment opportunities for Systems Analysts with any of the following skills: SAP-ENS; TERADATA; VB. Developers exp. In WIRELESS/802.X; STRATUS, UNIX; UNIX Systems Admin and Network Admin. Positions are available throughout the US inc. Hamilton & W. Trenton NJ, Philadelphia, PA. IPS also has openings for Sales and Recruiting staff in our San Francisco office. Electronic responses are encouraged, cfavell@ipsamerica.com or mail resume to IPS, 1875 So. Grant Street, #300, San Mateo, CA 94402 (Fax) 650-572-8679. Principals only please.

Imaging Software Engineer. Develop and maintain business specific implementation of purchased document technology applications using ActionPoint scripting language; develop reusable program modules (COM objects) for business application integration; maintain DocuPACT source code developed in object oriented technology; create and maintain WEB interface for DocuPACT based on XML; provide solutions to DocuPACT user problems, use MS SQL to extract data into document repository; incorporate document technologies into strategic design and architecture of Enterprise Application Integration solutions; and collect, define, publish, and adopt enterprise wide standards for unstructured data repository storage, metadata and style sheets definitions, and systems security and access. Minimum requirements: Bachelor's degree or equivalent in computer science or engineering plus two years experience. Prior experience must include two years of C++ and one year in web development and imaging systems or document management systems using XML/HTML, Java, and DocuPact. Competitive salary. Hours: 8 am - 5 pm, M-F. *Must have indefinite right to work in U.S. Send resume demonstrating minimum requirements to: Tipton Bradford, c/o ChoicePoint AVP-Human Resources, 1000 Alderman Drive, 70-A, Alpharetta, GA 30005.

Cedar Rapids, IA and various locations in U.S. - SAP Programmer - Convert project specifications and statements of problems and procedures to detailed logical flow charts for coding into computer language. Develop and write computer programs to store, locate, and retrieve specific documents, data and information. Design and write programs in SAP R/3. Involved with development of SAP R/3 system. Work with ABAP/4 in SAP R/3. Must have Bachelor's in computer science and 2 years experience as a computer professional. Will accept Associate's plus 6 years work experience in lieu of Bachelor's. Must have SAP R/3 4.x F1 Module Certification and SAP R/3 3/x ABAP/4 Developer Certification. Must have experience in Development Work Bench, Screen Painter, Menu Painter, Interactive Report, Module pool programming, Modification, SAP Script (Smart Form), User-Exit, BDC Programming, Data Transfer, RFC Programming, Runtime Analysis, Data Dictionary. Position is 40 hours/week from 8 to 5 w/ salary \$59,635/yr. Must have proof of legal authority to work in the U.S. Submit resume to Iowa Workforce Center, 800 7th St, SE, Cedar Rapids, Iowa 52406-0729. Refer to Job Order No. 1101761. Employer paid advertisement.

Software Professionals and Managers
Majesco Software, Inc., a leading IT consulting firm with U.S. headquarters in Irving, TX, is looking for qualified IT Professionals and IT Business Development Directors.

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Sr. Computer Systems Analyst wanted to work in Rochester Hills, MI to maintain business information systems operational at all times with scheduled downtime having a minimum impact on users; research and recommend state-of-the-art systems to replace or augment current equipment or software; write new software utilities including reports to support users' needs; provide consulting services and training to computer users; and provide user and system documentation. Requires BS degree in Engineering, Business or Computer Science; 2 years experience as a Systems Administrator; at least 1 year of Oracle experience through coursework or employment experience; and at least one bachelor degree level course in each of the following: Program Logic Controllers; Robotics in Manufacturing; Automated Manufacturing Systems. 40 hours per week, overtime varies, 8:00 a.m. to 5:00 p.m., \$94,440 per year. Employer paid ad. Send resume to MDCD/ESA, P.O. Box 11170, Detroit, MI 48202-1170, refer to Reference No. 210545.

Sr. Consultant. Job location: Hartford, CT. Duties: Perform database admin. & analysis, design, data modeling, & troubleshooting tasks & testing activities. Design & develop complex solutions from customer's business reqmts. Translate business/fnc. Reqmts. into code. Implement system enhance. & changes from tech. reqmts. & specs. Develop, modify, test & deploy Oracle forms, reports, PL/SQL stored procedures & complex SQL queries & views using Oracle. Perform Pro-COBOL coding required to maintain & enhance existing product set. Requires: M.S. in Comp. Sci., Eng. or a related field & 3 yrs. exp. in the job offered or 3 yrs. exp. as a Database Admin. or Consultant. Concurrent exp. must incl. 3 yrs. exp. performing database analysis & 3 yrs. exp. using Oracle. Send resume (no calls) to: Marcy Baldwin, CTG, Inc., 3 Neptune Dr., Ste. Q17, Poughkeepsie, NY 12601-5571.

Programmer/Analyst: Analyze, design, develop, test, implement and maintain customized business software applications in a mainframe or midframe environment using AS/400 and RPG/400 technologies. Will also provide in-depth trouble shooting and problem solving as well as analysis, design, development and implementation assistance to AS/400 programmers, system administrators, operators and end users. Must have Bachelor's or equivalent in CS/Math/Engineering or related. Must have 2 yrs exp. in job offered. Must be willing to be assigned to unanticipated client sites throughout the United States. Salary: \$69,359.94/yr Hrs: 8:00am-5:00pm, 40/wk. Please send 2 copies of resume to: Case # 2002-02313, Labor Exchange Office, 19 Stanford St, 1st Fl., Boston, MA 02114.

Technical Project Mgr. Job location: Chicago, IL. Duties: Resp. for managing tech. teams for PeopleSoft Financials & HRMS modules. Create tech. design spec. docs using pre-defined business functions. Manage & train resources to code Unix Shell scripts & SQR (reports & interfaces), SQA Robot, Component Interface & PeopleCode & to use PGP & SSL Encryption. Create & manage projects using MS-Project. Manage tech. teams resp. for PeopleSoft Appl. Security & testing teams that perform func., integration & user acceptance testing. Requires: B.S. in Comp. Sci., Eng. or a related field & 4 yrs. exp. in the job offered or 4 yrs. exp. as a Developer, Syst. Analyst, Director or Tech. Lead. Concurrent exp. must incl. 4 yrs. exp. coding Unix Shell scripts & 1 yr. exp. managing resources to code using PeopleCode. Send resume (no calls) to: Diane Tuccito, Answerthink, Inc., 817 W. Peachtree St., Ste. 800, Atlanta, GA 30308.

SENIOR PROGRAMMER/ANALYST to analyze, design, develop, test and maintain application software using Oracle DBA, PL/SQL, Oracle Forms/Reports, Oracle Forms Services, Oracle Reports Services, Oracle Designer, Pro*C, C++, Visual C++, UNIX Shell Scripting and Btrieve SQL Utility under SUN Solaris and UNIX operating systems. Require: B.S. degree in Computer Science, an Engineering discipline, or a closely related field with 2 yrs. of exp. in the job offered or as a Systems Analyst. Competitive salary offered. Send resume to: Donna F. Loop, Spartech Corporation, 120 S. Central Ave., Ste. 1700, Clayton, MO 63105; Attn: Job NM.

Computer Programmer. Job location: Middletown, NJ. Duties: Assist w/develop. of network provisioning & automation software platforms in C++, Java, CORBA, X-Windows, Oracle & UNIX environ. Perform programming using Java, C/C++, JSP, Servlet, J2EE, JDBC, SQL, PL/SQL & Oracle. Design & develop JSP tag libraries & custom tags, JavaBeans, Servlets & JSPs. Debug system defects & malfunctions. Requires: B.S. (or foreign equiv.) in Comp. Sci., Eng. or a related field & 2 yrs. exp. in the job offered or 2 yrs. exp. as a Developer, Software Eng., Prog/Analyst or Prog. Concurrent exp. must incl. 2 yrs. exp. designing & developing JSP tag libraries & custom tags & 2 yrs. exp. using Java & C++. Send resume (no calls) to: Marcy Baldwin, CTG, Inc., 3 Neptune Dr., Ste. Q17, Poughkeepsie, NY 12601-5571.

(SEQ CHAPTER 1h 1r 1) Programmer/Analyst: Analyze, design, develop, test, implement and maintain customized software applications in a client/server environment using Oracle, Unix and SQL technologies. May be used on multi-tier systems related to Internet/Intranet/E Commerce. Must have BS or equivalent in CS/Math/Engineering or related. Must have 2 yrs exp. in job offered. Must be willing to be assigned to unanticipated client sites throughout the United States. Salary: \$69,359.94/yr Hrs: 8:00am-5:00pm, 40/wk. Please send 2 copies of resume to: Case # 2002-02313, Labor Exchange Office, 19 Stanford St, 1st Fl., Boston, MA 02114.

SW Engineer - Under direct supervision of Sr. SW Eng., sw eng. will design & devlp. software & sustain co.'s cutting edge telephony devices. Develop & enhance serviceability tools & participate in design & code reviews. Will test & integrate telecom. products & provide critical bug fixes for customers. Will provide customer software enhancements & use programming/analytical skills to provide services for debugging. BS in Comp. Eng., Comp. Sci., E.E. or equiv. + 2 yrs exp. in job offered or w/ sw devlpmt. Must have knowledge in at least 1 of the following telecom. protocols, ISDN or SS7 Call Processing, ATM or TCP/IP as well as strong coding skills in C. 40 hrs/wk; Sal.: \$85,000/yr. Send 2 resumes to: Case #200201866, Labor Exchange Office, 19 Stanford St 1st Fl, Boston MA 02114.

(SEQ CHAPTER 1h 1r 1) Programmer/Analyst: Analyze, design, develop, test, implement and maintain customized software applications using J2EE platform, Java, and Cobra. May be used on multi-tier systems related to Internet/Intranet/E Commerce. Must have Bachelor or equivalent in CS/Math/Engineering or related. Must have 2 years exp. in job offered or in Design, development and integration of enterprise applications. Such experience must include Java, Cobra and J2EE technologies. Must be willing to be assigned to unanticipated client sites throughout the United States. Salary: \$75,000/yr Hrs: 8:00a.m.-5:00p.m., 40/wk. Please send 2 copies of resume to: Case No. 200202294, Labor Exchange Office, 19 Stanford St, 1st Fl, Boston, MA 02114.

VP SOFTWARE ENGINEERING to direct and coordinate activities of software engineering department in the design and development of applications using object oriented methodology, UML, EJB, JSP, JMS, C++, PERL, ASP, Cold Fusion, MS SQL Server, Sybase, MS MQ, Tibco RV, SOAP, TCP/IP, LDAP, JavaScript, Shockwave, Vignette Story Server, Interwoven TeamSite and Tibco PortalBuilder; Review analyses of activities, costs, operations and forecast data to determine department progress toward stated goals and objectives; Analyze technology trends, human resource needs, and market demand to plan recommend and manage organizational and operational changes to enhance processes. Requires: B.S. in Computer Science, or a closely related field with 2 yrs. of exp. in the job offered or as a Software Engineer. Experience must include at least six months leading a software development team and being responsible for all project management activities. Competitive salary offered. Send resume to: Cheri Cannon, Macquarium, Inc., 1800 Peachtree St., NW, Suite 250, Atlanta, GA 30309; Attn: Job SK.

Computer Programmer. Job location: Middletown, NJ. Duties: Assist w/develop. of network provisioning & automation software platforms in C++, Java, CORBA, X-Windows, Oracle & UNIX environ. Perform programming using Java, C/C++, JSP, Servlet, J2EE, JDBC, SQL, PL/SQL & Oracle. Design & develop JSP tag libraries & custom tags, JavaBeans, Servlets & JSPs. Debug system defects & malfunctions. Requires: B.S. (or foreign equiv.) in Comp. Sci., Eng. or a related field & 2 yrs. exp. in the job offered or 2 yrs. exp. as a Developer, Software Eng., Prog/Analyst or Prog. Concurrent exp. must incl. 2 yrs. exp. designing & developing JSP tag libraries & custom tags & 2 yrs. exp. using Java & C++. Send resume (no calls) to: Marcy Baldwin, CTG, Inc., 3 Neptune Dr., Ste. Q17, Poughkeepsie, NY 12601-5571.

Vice President, Central Services (Bohemia, NY) - Design, build, market & manage a portfolio of IT solutions for SITA's multimillion dollar Airport and Desktop Services (ADS) business line. Manage 180 staff and \$20M budget. Prepare Engineering, Product Management & Product Marketing depts. for IPO. Launch the next generation of "Common Use" systems. Utilize exp. in managing air transport industry IT systems development, managing budgets of \$20M+, leading large organizations (100+ staff) and commercial management expertise. BS & 8 years related exp. required. Send resumes to SITA: susan.farrel@sita.aero, or fax to (631) 563-3918. Equal Opportunity Employer.

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Oracle Bid

to potentially standardize its human resource operations on a single set of applications.

"I believe it's Oracle's motivation to stall the market as long as possible," Hill said at the annual conference of J.D. Edwards' Quest user group here last week. Denver-based J.D. Edwards this month agreed to be acquired by Pleasanton, Calif.-based PeopleSoft, a deal that now could hinge on whether Oracle succeeds in its effort to buy PeopleSoft.

Hill said Praxair runs applications from all three vendors in its various business units, including Oracle financials and PeopleSoft human resource and payroll systems. He added that if Oracle prevails in its takeover attempt, he would reconsider his PeopleSoft investment — even though Oracle CEO Larry Ellison has promised free migra-

HOSTILE TAKEOVER

tions to Oracle's E-Business Suite 11i software or Version 8 of PeopleSoft's applications.

"It never happens that way," Hill said. "Any ERP conversion is a highly costly and complex endeavor, and [the need to do one] would cause us to re-evaluate the marketplace."

Oracle, which formally launched a tender offer for PeopleSoft's stock last week, has said it would continue to support PeopleSoft's existing users and wouldn't force them to migrate to its own applications. But Oracle doesn't plan to actively sell PeopleSoft's products to new customers and has indicated that it would reassess PeopleSoft's agreement to buy J.D. Edwards.

"We see only a potential downside of significant additional costs," said Bill Monroe, chief operating officer at the Texas Education Agency in Austin, which runs PeopleSoft's financial management and CRM software.

"Conversion to another sys-

tem could cost over \$2 million, plus database costs," Monroe said. He added that agency officials have yet to assess other factors that could result from a takeover by Oracle, such as the potential that software projects will have to be delayed or that future functionality will be lost.

Mark Federle, CIO at The Weitz Co., a Des Moines, Iowa-based construction firm that runs hosted versions of J.D. Edwards' OneWorld XE applications, is considering an upgrade to Version 8 of the ERP software within the next year.

That project wouldn't be affected by a merger of J.D. Edwards with PeopleSoft, Federle said. But he added that if Oracle buys the two companies and then eliminates OneWorld XE functions that are specific to the construction industry, he will stick with the J.D. Edwards applications for as long as he can while looking for new software that meets his needs.

PeopleSoft's board last week voted unanimously to recom-

mend that shareholders reject Oracle's \$5.1 billion offer, saying that the takeover "would undoubtedly face lengthy antitrust scrutiny" and has "a significant likelihood" of being blocked by the government. Oracle and PeopleSoft are currently the No. 2 and No. 3 business application vendors, respectively, behind market leader SAP AG.

PeopleSoft also claimed that the unsolicited offer undervalues the company and was designed to disrupt its operations and sales momentum by creating uncertainties for users.

Meanwhile, J.D. Edwards filed lawsuits in Colorado and California state courts charging that Oracle had engaged in unfair business practices and illegally interfered with the planned merger of PeopleSoft and J.D. Edwards. "We will not sit by idly while Oracle pursues this arrogant, unlawful and destructive course of action," J.D. Edwards CEO Bob Dutkowsky said in a statement.

Oracle responded that the J.D. Edwards suits have "no merit whatsoever." It also asserted that PeopleSoft has "put the self-interest of [its] management over the best interests of PeopleSoft shareholders" by rejecting Oracle's offer.

Several J.D. Edwards users at the Quest Global 2003 conference said they have yet to fully assess what a takeover of PeopleSoft by Oracle would mean to them. "I think the only thing to do is sit back and wait," said Leah Hansen, applications manager at CanWel Distribution Ltd., a building materials distributor in Vancouver, British Columbia. "We don't know what's going to happen."

BUSINESS AS USUAL

At Quest: J.D. Edwards outlines a series of enhancements to its applications:

QuickLink 39144

At Sapphire: SAP readies upgrades, woos PeopleSoft and J.D. Edwards users:

QuickLink 39172

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“

Craig Conway
said our offer is
designed to disrupt
PeopleSoft's strong
momentum in the
market. I'm not
sure how [software
sales dropping
39%] is strong
momentum.

LARRY ELLISON, CEO,
ORACLE CORP.



“

PeopleSoft was
targeted for a
hostile bid exactly
because we have
stronger products
[than Oracle].

CRAIG CONWAY, CEO,
PEOPLESOF INC.



Oracle Users See Benefits in Takeover

PeopleSoft and J.D. Edwards users seem to be widely opposed to Oracle's proposed buyout bid, but the unsolicited offer is getting a better reception from IT managers who use Oracle's applications.

Several users said last week that they see potential benefits from having some of PeopleSoft's technology embedded in Oracle's E-Business Suite 11i applications. For example, Oracle users could gain useful functionality from PeopleSoft's human resource and payroll software, said Arthur Hunt, president of the independent Oracle Applications Users Group (OAUG) in Atlanta. "I'm very upbeat about it," said Hunt, who is also operations manager at Yale University.

ty in New Haven, Conn.

Melanie Bock, a San Francisco-based Oracle consultant and a past OAUG president, said she also thinks an acquisition of PeopleSoft would be good for Oracle users in the long run. A combination of the two companies would mean a broader base of customers, which would widen user networking opportunities and potentially attract a larger number of skilled consultants and staffers, Bock said.

However, she added that Oracle initially would likely have to purge and merge operations, which could mean a loss of resources for its support and development teams. "Short term, I would see a negative impact for everyone," Bock said.

One Oracle user who doesn't like the proposed takeover is Frank Milano, CIO at Terracon Inc., an engineering consulting firm in Lenexa, Kan. Milano said there's no synergy between PeopleSoft and Oracle and that he sees the buyout offer as an attempt by Oracle to defend itself against PeopleSoft, which would become the second-largest business applications vendor if it buys J.D. Edwards.

"Five billion dollars is a lot of money to eliminate a competitor," Milano said. He added that a takeover could also drain Oracle's software engineering resources, since it would have to invest in development of two separate product lines.

— Marc L. Songini

FRANK HAYES ■ FRANKLY SPEAKING

A Virus Checklist

BUGBEAR. KLEZ. SOBIG — that's the one that appears to come from Microsoft.com. This summer, the virus hits just keep coming. It's as if, for the past month, the virus world has been softening us up for Microsoft's announcement last week that it's getting into the antivirus business.

Will Microsoft's arrival really help? Probably not. Antivirus subscriptions make for a steady revenue stream, and Microsoft is big on steady revenue streams these days. But the company isn't likely to add much new in the line of virus-protection technology.

Besides, except for software security holes, the real virus problem today isn't about technology. It's about people.

People who get sucked in by interesting e-mail subject lines. People who click to open mystery attachments. People who visit Web sites or download files that they shouldn't. People who work their way around firewalls and virus shields. And yes, people who fail to keep firewalls and virus shields maintained.

Virus writers use "social engineering" — clever psychological tricks — to help their payloads get through. They leverage human curiosity, vanity, fear and foolishness to defeat even the best antivirus technology.

You've got the technology you need. Now, in this long, hot summer of virus attacks, it's the perfect time to make sure you have a handle on the people part of the problem, too.

■ Start by making sure antivirus software is actually running on all your PCs. You probably can't afford a machine-by-machine sweep right now. But make sure every time a support tech touches a PC, that tech checks its antivirus logs, confirms that virus scans and definition downloads are running on schedule, and verifies that settings are correct.

■ Remember, users are clever. If antivirus software gets in the way, they'll turn it off or work around it — and then tell they're co-workers how they did it. So if you spot a problem machine with scans turned off or settings changed, there's a good chance that nearby PCs will be that way too.

■ Keep track of your biggest problem users — both the clever ones who change settings and the dumb ones who open every attachment. Talk with them. Explain the problem. Ask why they break the rules. They may show you legit-

mate issues that you can help with. You may persuade them to play it safer. In any case, you'll want to recheck their PCs often.

■ Leverage news reports about virus outbreaks. When you see one, send a short message to your users — say, six or eight lines — telling them that "CNN is reporting" or "the local newspaper has a story" about the virus. Remind them once again to be careful about e-mail attachments, downloaded files and unfamiliar Web sites. Give them a few details, but be sure to keep it brief. It's really just reinforcement, not a full explanation, and users have short attention spans.

■ Go hunting for the ways users find to circumvent your antivirus systems. Home computers that connect to company systems, Web mail, unauthorized modems and wireless hubs, and nonstandard Internet applications are the usual culprits. But don't limit yourself to that short list. Remember, users are creative — and they may think what they're doing is safe because you've never told them not to do it.

■ Finally, do a little social engineering of your own. Practice looking alarmed in a mirror, then trot that expression out when you discover dangerous user habits. Express concern about the work they'll lose, not just the safety of your systems. Say "We need to be careful," not just "Don't ever do that!" Tell them their ways around the firewall are clever, but very dangerous. Flatter them, cajole them, guilt them — but convince them.

If that sounds a little silly, well, maybe it is. But it's no sillier than waiting for Microsoft to save you from Sobig, Bugbear and Klez. ▶



FRANK HAYES, Computerworld's senior news columnist, has covered IT for more than 20 years. Contact him at frank.hayes@computerworld.com.

Just One Little Problem

Support tech is installing a new PC in this cubicle, and removing the old power cord will require dismantling half the cube. "He decided just to cut off the end and pull the wire out," reports IT manager pilot fish. "Unfortunately, he had not unplugged the cord before attempting this. Fortunately for him, the scissors had plastic handles" — so he survived.

Trapped

This early finger-print-based electronic lock on the data center seems like a great idea in the mid-1980s.

"Unfortunately, the morning shift supervisor was one of those people who did not fingerprint well," says an on-scene pilot fish.

The scanner would reject her print and lock her between two doors, forcing her to signal the guard for help. "But the night shift guard tended to fall asleep," fish sighs.

"Sometimes the supervisor would be unable to leave the man-trap until the next shift arrived or another employee entered the man-trap to let her out."



it down for a week. When I pointed out it was my predecessor who did this, I was told, "You shouldn't have let him do that."

Unclear on the Concept

Support pilot fish sends out an e-mail message with detailed instructions for copying the attached binary file to the correct directory. "Call me if you have any trouble," fish adds. One user responds by e-mail: "We cannot get the attachment sent with this e-mail. Could you please fax it to us?"

Who Needs Security?

This consulting group uses a Web-based conferencing service outside the firewall for sharing presentations. But this consultant finds a new use for it: Because it allows taking control of a remote machine, he tells IT pilot fish, he can troubleshoot PCs and even servers without going to the user's site. "Cool, huh?" says fish. "Until you notice we've just bypassed all the customer's IT security. I wonder what the customer's security team would say — if they knew."

Managing Up

Not long before leaving for a new job, this sysadmin invites the pilot fish subordinate who will succeed him to help upgrade the Web server over the weekend. It all goes smoothly, but on Monday nothing's working. "After days of trying to fix it, he finally restored the server from a backup, and everything worked perfectly," fish says. "The next year during my review, I got a black mark for screwing up the server and having



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Hyatt Regency**

8:00am to 8:30am

Registration and Networking Breakfast

8:30am to 9:00am

**Welcome and Opening Keynote
Outsourcing Watch 2003:
The Best of Both Shores**

Maryfran Johnson, Editor in Chief, Computerworld

9:00am to 9:30am

**Industry Update
Evaluating Your IT Sourcing Options**

Bart Perkins, Managing Partner, Leverage Partners (an IT consultancy)

9:30am to 10:00am

Business Case Study

Rick Hamilton, CTO, DFS Group Ltd.

10:00am to 10:30am

Refreshment Break

10:30am to 11:30am

**Outsourcing Strategies
Leadership Strategies in Offshore
Outsourcing**

Moderator: Maryfran Johnson, Editor in Chief, Computerworld

Panelists:

- Marty Chuck, CIO, Agilent Technologies
- Rick Hamilton, CTO, DFS Group Ltd.
- Jerry McElhatton, Senior EVP of Global Technology and Operations, MasterCard International
- Greg Schueman, Vice President and CTO, Mercury Insurance Group

11:30am to Noon

Open Forum



Maryfran Johnson



Bart Perkins



Rick Hamilton



Marty Chuck

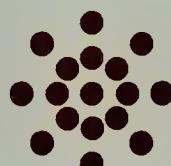


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